

1969

1969-1970 Catalog

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college of the
HOLY CROSS

catalog 1969-1970

CORPORATE TITLE:

*"Trustees of The College of The
Holy Cross"*

ACT OF INCORPORATION

*Commonwealth of Massachusetts
in the Year One Thousand Eight Hundred and Sixty-Five*

**THE
COLLEGE
of the
HOLY CROSS**

A College of Arts and Sciences
Worcester, Massachusetts 01610



CATALOG

VOLUME 65
1969-70

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Academic Calendar

September, 1969—June, 1970

FALL TERM

Sept.	6	Saturday	Freshmen arrive.
Sept.	7, 8, 9	Sun., Mon., Tues.	Freshman orientation.
Sept.	8	Monday	Advisors.
Sept.	9, 10	Tues., Wed.	Registration for all classes.
Sept.	11	Thursday	Fall term begins.
			Mass of the Holy Spirit.
Oct.	13	Monday	Holiday.
Nov.	11	Tuesday	Holiday.
Nov.	25	Tuesday	Thanksgiving recess begins after last class.
Dec.	1	Monday	Classes resume.
Dec.	19	Friday	Semester recess begins after last class.
Jan.	5	Monday	Study week begins.
Jan.	12	Monday	Final term examinations begin.
Jan.	20	Tuesday	Semester recess begins after last examination.

SPRING TERM

Jan.	26	Monday	Advisors.
Jan.	27, 28	Tues., Wed.	Registration for all classes.
Jan.	29	Thursday	Spring term begins.
Feb.	16	Monday	Holiday.
Mar.	25	Wednesday	Easter recess begins after last class.
Apr.	6	Monday	Classes resume.
Apr.	20	Monday	Holiday.
May	18	Monday	Study week begins.
May	25	Monday	Holiday.
May	26	Tuesday	Second term examinations begin.
June	3	Wednesday	Examinations end.
June	9	Tuesday	Baccalaureate exercises.
June	10	Wednesday	Commencement day.

1969

SEPTEMBER

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OCTOBER

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DECEMBER

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1970

JANUARY

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JUNE

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¹On leave, 1969-70.

²On leave, 1969-70 (Fall Term).

³On leave, 1969-70 (Spring Term).

⁴1968-69 (Fall Term).

⁵1968-69 (Spring Term).

⁶1968-69.

*R.I.P.

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¹Term expires June 1969.

²Term expires June 1970.

³Term expires June 1971.

⁴Term expires March 1970.

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Objectives

The Ideal Graduate: Intellectually and Personally Mature

The ideal Holy Cross graduate should have the ability to analyze, synthesize, and evaluate evidence in the pursuit of truth; he must distinguish the various types of evidence associated with the different methodologies of the humanistic and scientific disciplines. He should have special competence in one of these disciplines in order to give depth to his learning in one area of investigation. When in possession of evidence, he should be able to communicate it effectively. He should understand and be able to evaluate his own culture (its literature, art, and philosophy) both in its historical development and in its present structure, and have some acquaintance with and appreciation of other cultures. Finally, his deep understanding of his own faith should give him a unified view of life, an awareness of his church's continuing redemptive action, and a clear perception of his own role as a member of that church.

Moreover, he should be morally decisive in confronting life, courageous and hopeful in exercising initiative, yet loyal to legitimate authority. This will demand a positive-minded patience that is neither passivity nor abandonment of ideals. In response to the demands of the Judaeo-Christian tradition which undergirds Western culture, a vocation further specified by the contemporary needs and potential of human society, he will be personally dedicated and generously committed to creative involvement and leadership in the intellectual, social, cultural, religious life of the world.

As a person he should be so open in love to God and men of every race and creed, that he may combine sympathetic action in a pluralistic world with personal dedication to his own beliefs. He should be endowed with liberality of mind, awareness of his divinely human dignity, freedom of spirit, and that balance of intellectual humility and independence which respects the traditions and accomplishments of the past but is open to new ideas and developments.

A Liberal Education . . .

The College of the Holy Cross is committed to the excellence of the liberal arts for forming the well-educated person. Its faculty and students participate in an unhindered pursuit of truth, seeking evidence wherever it may be found, in nature, in reason, in revelation, and probing all the implications of truth, both speculative and practical.

The College offers a broadening curriculum in the liberal arts and sciences, wherein the student's powers of reasoned analysis and synthesis are sharpened by mathematics, the inductions of the natural sciences and the deductions of philosophy; his understanding of man is broadened by great literature; his creative imagination is aroused and his aesthetic awareness is intensified by the fine arts; his faculty of communication is refined by a study of languages. History

contributes a sense of perspective; the social sciences, a consciousness of the factors shaping society; theology, the intellectual foundation for man's relationship with God.

Combining this general curriculum with that degree of specialization a student needs to enter upon the career of his choice, the College offers opportunities to major in biology, chemistry, classics, economics, economics-accounting, English, fine arts, history, mathematics, modern languages and literatures (French, German, Italian, Russian, Spanish), philosophy, physics, political science, psychology, sociology, and theology.

... in the Judaeo-Christian Tradition

Since the well-educated person is committed not merely to the pursuit of truth, but to the principles and challenges of human living, the College, in its long history, has always provided a rich spiritual atmosphere, in which both the secular pursuit of truth and the individual's religious commitment prosper and lend mutual support to the development of the educated person.

A continuing monument to the intellectual and spiritual labors of the Fathers of the Society of Jesus, who founded and guide the College, and to their personal dedication to the Christian faith, Holy Cross welcomes to full membership in its student body and faculty those of other faiths who share its devotion to the enterprise of a truly liberal education. While its history explains the amplitude of the spiritual programs available to Catholic students, the College stands ready to assist all members of the College community to enjoy and practice the fullness of their personal beliefs.

Religious opportunities available to Catholic students include a dynamic liturgical program, daily Masses at hours convenient for students, retreats in the style of St. Ignatius Loyola, service to the Church through the Sodality of Our Lady, and programs of action in the Lay Apostolate on and off Campus. The Jesuit Fathers of the faculty and administrative staff of the College, whether as individuals or as chaplains of the College or of the Residence Halls, offer the student many occasions for religious guidance and spiritual counsel and direction.

Responsibility

It is the constant purpose of the College to encourage the growth of personal and corporate responsibility consistent with the mature liberty of the educated man. Serious breaches of the code that demands respect for order, morality, personal honor and the rights of others will necessitate withdrawal from the College. The College reserves the right to dismiss a student at any time without any definite public charge. Detailed regulations and customs governing discipline are found in the Student Handbook.

History of the College

In 1843 the Most Rev. Benedict Joseph Fenwick, Second Bishop of Boston, founded the College of the Holy Cross. He gave the College the name of his Cathedral with the motto and seal of the Boston Diocese. He entrusted the direction of the College to the Fathers of the Society of Jesus. Classes began on November 2, 1843, and in 1844 the first college building was erected to accommodate ninety students. However, with the exception of the east wing, this building was destroyed by fire on July 14, 1852. With the cooperation of the Bishop of Boston, Most Rev. John B. Fitzpatrick, the Fathers of the Society provided for the building of Fenwick Hall, and the College was reopened in October, 1853, with a newly-enrolled freshman class. The first graduation class of this new period was that of 1858. From 1849 to 1853 and from 1858 to 1865, degrees were conferred by Georgetown University. In 1865 the College received its charter from the state and conferred its own degrees.

In 1868 a west wing was added and the central building was raised one story and capped with two stately towers. In 1875 the east wing of the building was raised and extended. In 1893 O'Kane Hall, really a wing of Fenwick Hall, was built, and classes were held in the new addition in the following year. By 1904 the college enrollment had passed the five hundred mark. To take care of the increased enrollment, Alumni Hall was built under the direction of the President, Rev. Joseph F. Hanselman, S.J. With continued growth, a new dormitory, Beaven Hall, was opened in 1914, in the Presidency of Rev. Joseph N. Dinand, S.J. It was named after Rt. Rev. Thomas D. Beaven, '70, Bishop of Springfield, who had sponsored its construction.

By 1920 the student body had increased to almost eight hundred so that a new dormitory, Loyola Hall, was opened under the direction of Rev. James J. Carlin, S.J., in 1922. In 1924 St. Joseph's Memorial Chapel was dedicated. The Dinand Memorial Library was opened in 1927, under the Presidency of Rev. John M. Fox, S.J. Kimball Hall, the general student center, was erected in 1935, under the aegis of President Francis J. Dolan, S.J. Wheeler Hall was opened in January, 1940, in the Presidency of Rev. Joseph R. N. Maxwell, S.J., during whose term of office Loyola Hall was renamed Carlin Hall.

In 1941 a peacetime Naval ROTC Program was inaugurated, but it was soon converted into the V-1, V-5, V-7, V-12 wartime programs. In the wartime centennial year of 1943, the student body numbered 1,200. On June 26, 1946 the naval wartime programs were discontinued, and the College reverted to its peacetime status.

In 1947 under the Presidency of Rev. William J. Healy, S.J., and intramural gymnasium was added to the college buildings. In the following year, Station WCHC was dedicated. In 1951, a new Biology building was dedicated by the

President, Rev. John A. O'Brien, S.J. On July 1, 1951, the Air Force Reserve Officers' Training Corps was established at the College, and training began in September. By 1954 the enrollment was over 1,800 so that two dormitories, Hanselman and Lehy, were constructed under the direction of Rev. John A. O'Brien; S.J. In 1959, the renewed emphasis upon science was reflected with the dedication by President William A. Donaghy, S.J. of the Haberlin science building. This building was named in honor of the memory of Rt. Rev. Richard J. Haberlin, P.A., Class of 1906.

On June 16, 1960, Reverend Raymond J. Swords, S.J., became the twenty-fourth president of the College. Under his direction the most ambitious development program in the history of the College has been undertaken for several projects considered essential to Holy Cross. Three new residence halls were constructed on the upper campus level, and named for President James Clark, S.J., the Most Reverend James A. Healy, an alumnus who became America's first Catholic bishop of Negro ancestry, and the Reverend Thomas F. Mulledy, S.J., the College's first president. The most recent of these, Mulledy Hall, was opened in September 1966. Loyola Hall, completed in September 1965, houses the new Jesuit faculty residence and a student infirmary that is a licensed hospital. That same year, a new maintenance building was completed. In October 1967, the College opened the Henry M. Hogan Campus Center which contains complete facilities for student faculty activities. And that same year, the College joined with the other colleges in the Metropolitan Worcester Area to form the Worcester Consortium for Higher Education.

The next phase of the College's development looks toward expanding library services, developing programs in the fine arts, and increasing endowment for faculty salaries and scholarship aid. The College is currently engaged in an intensive study of these needs and priorities, and of the resources to meet them.

Presidents of Holy Cross

1843-1969

1843-45	.....Rev. Thomas F. Mulledy, S.J.
1845-48	.....Rev. James Ryder, S.J.
1848-51	.....Rev. John Early, S.J.
1851-54, 1857-61, 1869-73	.....Rev. Anthony F. Ciampi, S.J.
1854-57	.....Rev. Peter J. Blenkinsop, S.J.
1861-67	.....Rev. James Clark, S.J.
1867-69, 1883-87	.....Rev. Robert W. Brady, S.J.
1873-78	.....Rev. Joseph B. O'Hagan, S.J.
1878-83	.....Rev. Edward D. Boone, S.J.
1887-89	.....Rev. Samuel Cahill, S.J.
1889-93	.....Rev. Michael O'Kane, S.J.

Presidents (continued)

1893-95	Rev. Edward A. McGurk, S.J.
1895-1901	Rev. John F. Lehy, S.J.
1901-06	Rev. Joseph F. Hanselman, S.J.
1906-11	Rev. Thomas E. Murphy, S.J.
1911-18, 1924-27	Rev. Joseph N. Dinand, S.J.
1918-24	Rev. James J. Carlin, S.J.
1927-33	Rev. John M. Fox, S.J.
1933-39	Rev. Francis J. Dolan, S.J.
1939-45	Rev. Joseph R. N. Maxwell, S.J.
1945-48	Rev. William J. Healy, S.J.
1948-54	Rev. John A. O'Brien, S.J.
1954-60	Rev. William A. Donaghy, S.J.
1960-	Rev. Raymond J. Swords, S.J.

The Campus

ALUMNI HALL, given by former students, contains student residences on the upper floors, classrooms and faculty offices on the lower floors. It was opened in 1904.

THE ATHLETIC FIELDS AND INTRAMURAL GYMNASIUM contain the football gridiron, the baseball diamond, the quarter-mile track, tennis courts, basketball courts, and facilities for all other outdoor and indoor sports. The baseball diamond on Fitton Field is bounded on the east by the football gridiron which is surrounded on four sides by stadia seating nearly 23,000. Freshman Field and Alumni Field are suitable for practice and for the games of the intramural teams. On the plateau that crowns the hill south of the college buildings, as well as on the lower east level, are laid out diamonds and fields for intramural contests, in which the majority of undergraduates participate. The Intramural Gymnasium was constructed in 1947.

BEAVEN HALL is named on honor of the late Bishop Thomas D. Beaven of Springfield, '70, who sponsored its construction. Opened in 1914, the building contains offices on the first floor and student residences on the upper floors.

BISHOP HEALY HALL was constructed during 1962. It is named for the late Most Rev. James A. Healy, Valedictorian of the College's first graduating class of 1849, the first American bishop of Negro ancestry, and the second bishop of Portland, Maine. The building contains living accommodations for students and faculty members and has a student lounge on the first floor.

CAMPION HALL was opened in 1936 to provide living quarters for a limited number of students and converted in the summer of 1962 to a student service facility.

CARLIN HALL was opened under the direction of Rev. James J. Carlin, S.J., as Loyola Hall in 1922 and later was re-named for Father Carlin, who was President from 1918-24. Student residences occupy the upper floors and classrooms and faculty offices are located on the lower floors.

CLARK HALL was constructed in 1962 and is dedicated to the late Rev. James P. Clark, S.J., President of the College from 1861-67. It contains living accommodations for students and faculty members and has a student lounge on the first floor.

DINAND LIBRARY was opened in 1927 and bears the name of the late Rev. Joseph N. Dinand, S.J., President of the College from 1911-18 and again during the years 1924-27. It contains more than 260,000 volumes, the Louise Imogene Guiney and David I. Walsh collections.

FENWICK HALL is the oldest of the college buildings. It is named for the founder of Holy Cross, the late Most Rev. Benedict Joseph Fenwick, second Bishop of Boston, who founded the College in 1843. Fenwick Hall was opened in 1844, destroyed by fire in 1852. It was rebuilt in 1853, with additions in 1868 and 1875. It contains administrative and faculty offices, as well as studios for arts programs.

HABERLIN HALL, constructed in 1959, accommodates the facilities of the Chemistry, Physics and Mathematics departments. Named for the late Rt. Rev. Msgr. Richard J. Haberlin, '06, former President of the Alumni Association and Pastor of St. Peter's Church in Dorchester, Mass. The building contains the Rev. Joseph T. O'Callahan, S.J. Science Library, named in honor of the late Emeritus Professor of Mathematics and Philosophy, and the first Chaplain to receive the Congressional Medal of Honor.

HANSELMAN HALL was constructed during 1954 and bears the name of the late Rev. Joseph F. Hanselman, S.J., President of the College from 1901-1906. It contains living accommodations for students and faculty members and has a student lounge on the first floor.

HENRY M. HOGAN CAMPUS CENTER, opened in October, 1967, offers a wide variety of services and facilities, providing a broad social, cultural, educational and recreational program for the entire college community. Named for Henry M. Hogan, '18, LL.D. '43, the Center is committed to continuing education and to complementing formal instruction with meaningful leisure-time activities.

KIMBALL HALL was constructed in 1935 and honors the name of Rev. Charles L. Kimball, S.J., former Classics professor at Holy Cross. It contains the student dining room and auditorium.

LEHY HALL was constructed during 1954. Dedicated to the late Rev. John F. Lehy, S.J., President of Holy Cross during the years 1895-1901. It contains living accommodations for students and faculty members and has a student lounge on the first floor.

LOYOLA HALL, the faculty residence and college infirmary, was opened in September, 1965 and named for the founder of the Society of Jesus, St. Ignatius Loyola.

MULLEDY HALL is the newest student residence, providing accommodations for nearly 400 students. Opened in 1966, and named in honor of the College's first President, Rev. Thomas F. Mulledy, S.J., this hall also contains lounges, meeting rooms, and areas for quiet study.

O'KANE HALL, built in 1893, stands at the summit of Linden Lane, the main entrance to the College. It honors the late Rev. Michael O'Kane, President of Holy Cross from 1889-93. On the main floor is the visitors' reception lounge and on upper floors are administrative and faculty offices, and the new Fenwick Theatre.

O'NEIL MEMORIAL HALL was opened in 1951 and is dedicated to the William F. O'Neil family, benefactors of the College. Located on the western side of Beaven Hall, it contains classrooms and facilities of the Biology department.

ST. JOSEPH'S MEMORIAL CHAPEL AND THE MARY CHAPEL are dedicated to the memory of the graduates of Holy Cross. Each of the two chapels contains a seating capacity of 900. The Memorial Chapel was constructed in 1924 and the Mary Chapel, which occupies the lower floor, was opened in 1955.

WHEELER HALL was opened in 1940 and honors the late Rev. John D. Wheeler, S.J., a former college administrator. It contains classrooms on the lower floor and student residences on the upper floors.

Affiliations

The better to promote its educational ideals and to share in the fruits of the scholarship of other institutions of learning, the College of the Holy Cross holds institutional membership in the following organizations:

The American Alumni Council, The American Association of Emeriti, The American Association of Colleges for Teacher Education, The American Association of Collegiate Registrars and Admissions Officers, The American Association of Higher Education, The American College Health Association, The American College Public Relations Association, The American Conference of Academic Deans, The American Council on Education, The American Mathematical Society, The American School of Classical Studies of Athens, The American School for Oriental Research, The Association of American Colleges, The Association of American Universities, The Association of College Deans and Advisers, Association of College Unions—International, The Association of Independent Colleges and Universities in Massachusetts, The Catholic Educational Association, The College Entrance Examination Board, Consortium of Supporting Institutions of the Hebrew Union College Biblical and Archaeologi-

cal School of Jerusalem, The Educational Testing Service, The Institute of European Studies, Institute of International Education, The Jesuit Educational Association, Massachusetts Council on Teacher Education, Mathematical Association of America, National Association of Student Personnel Administrators, National Catholic Education Association (National and New England), National Collegiate Honors Council, The National Commission on Accrediting, The National Educational Association, The New England Association of Colleges and Secondary Schools, The New England Conference on Graduate Education, New England Teacher Preparation Association, Regents of the University of the State of New York, Society for Scientific Study of Religion, Worcester Consortium for Higher Education.

Members of the faculty are associated with: The Acoustical Society of America, The American Academy of Political and Social Science, The American Accounting Association, The American Association for the Advancement of Science, The American Association of Jesuit Scientists, The American Association of Physics Teachers, The American Association of Teachers of French, The American Association of Teachers of German, The American Association of Teachers of Italian, The American Association of Teachers of Slavic Languages, The American Association of Teachers of Spanish and Portuguese, The American Association of University Professors, The American Astronomical Society, The American Catholic Historical Association, The American Catholic Psychological Association, The American Catholic Sociological Society, The American Chemical Society, The American Economic Association, The American Electrochemical Society, The American Historical Association, The American Institute of Certified Public Accountants, The American Institute of Chemists, The American Jesuit Historical Conference, The American Mathematical Society, The American Personnel and Guidance Association, The American Philological Association, The American Physical Society, The American Political Science Association, The American Psychological Association, The American Society for Public Administration, The American Sociological Association, The American Statistical Association.

Also, The Archaeological Institute of America, The Association of Existential Psychology and Psychiatry, The Association of Librarians of America, The Catholic Biblical Association of America, The Catholic Classical Association of New England, The Catholic Theological Society of America, The Chemical Society (London), The Classical Association of New England, The Eastern Association of College Deans and Advisors of Men, The Eastern Psychological Association, The Faraday Society, The Franklin Institute (Philadelphia), The Institute of Mathematical Statistics, The Institute for Electrical and Electronic Engineers, Institute of Physics, The Jesuit Philosophical Association, The Massachusetts Council of Teacher Education, The Massachusetts Psychological Association, The Mathematical Association of America, The Modern Language Association of America, The National Catholic Industrial Conference, The

National Liturgical Conference, The National Psi Chi, The New England Association of Chemistry Teachers, The New England Psychological Association, The New England Regional Law Association, New York Academy of Sciences, The New York Association of Clinical Psychologists, The Optical Society of America, The Physical Society (London), The College Theology Society, The Society of Sigma Xi, Population Association of America, Society for the Study of Social Problems and United Prison Association.

The College of the Holy Cross is a member college of the Harvard University Graduate School of Education "The Twenty-nine College Co-operative Plan."

Jesuit Educational Association

Colleges and Universities

Alabama	Spring Hill College, Spring Hill
California	Loyola University of Los Angeles Santa Clara University, Santa Clara University of San Francisco
Colorado	Regis College, Denver
Connecticut	Fairfield University, Fairfield
District of Columbia	Georgetown University, Washington
Illinois	Loyola University, Chicago
Louisiana	Loyola University, New Orleans
Maryland	Loyola College, Baltimore
Massachusetts	Boston College, Chestnut Hill College of the Holy Cross, Worcester
Michigan	University of Detroit, Detroit
Missouri	Rockhurst College, Kansas City St. Louis University, St. Louis
Nebraska	The Creighton University, Omaha
New Jersey	St. Peter's College, Jersey City
New York	Canisius College, Buffalo Fordham University, New York City Le Moyne College, Syracuse
Ohio	John Carroll University, Cleveland Xavier University, Cincinnati
Pennsylvania	St. Joseph's College, Philadelphia University of Scranton, Scranton
Washington	Gonzaga University, Spokane Seattle University, Seattle
West Virginia	Wheeling College, Wheeling
Wisconsin	Marquette University, Milwaukee

General Information

Admission

Admission Procedure

All correspondence pertaining to admission to Holy Cross should be addressed to the Director of Admissions. No application for admission to the class entering in September will be accepted after *February 1*, except for compelling reasons.

All candidates must take the College Board Scholastic Aptitude Test and three Achievement Tests. These tests must be taken in November, December, January or March of the senior year in high school, preferably in November, December or January. All candidates must take the Achievement Test in English Composition during senior year of secondary school. Candidates who will continue at Holy Cross the modern foreign language studied in secondary school must take a Modern Language Achievement Test in that language. This test will be used for placement purposes. Candidates who will study mathematics in their freshman year at Holy Cross as a required or elective course must take the Level II Mathematics Achievement Test. This test will be used for placement purposes. Therefore, the Level II Achievement Test taken in May of the senior year will be acceptable. Candidates whose freshman curriculum does not require the taking of either the Modern Language or Mathematics Level II Achievement Tests may substitute any two tests of their own choosing.

Applications will be accepted only from those students who have graduated from, or who are in the last year at an approved secondary school and who offer sufficient proof of scholarly endeavor within the bounds of a college preparatory program at this approved secondary school. The Admissions Board will give preferential consideration to those applicants whose secondary school records give evidence of superior scholastic achievement, and who merit from their school principal recommendation for college entrance. The results achieved in the College Board Tests will also be a factor in the decision of the board. *It is the responsibility of the candidate to arrange that all College Board scores be sent to the Office of Admissions directly from the College Entrance Examination Board. All acceptances are made with the presumed condition that all senior year courses and examinations will be successfully completed.*

Quantitative Admission Requirements

While the College does not demand specific academic unit requirements for admission, candidates must submit evidence of superior achievement within the framework of a program which prepares the candidate for the work of a liberal arts college. A program of this nature, customarily referred to as a college preparatory course, should emphasize study in English, mathematics, foreign language (ancient or modern), science, history and social studies. However, some deviation from this type of secondary school preparation may not neces-

sarily disqualify a candidate for admission to the College, since the Admissions Board is more concerned with the ability of the candidate to perform well in an intellectual endeavor than with the actual content of that endeavor. The Board also takes specific note of the individual talents and qualities of candidates as well as the extent of their extra-curricular involvement. The Board then reviews all these facts in the light of the candidate's potential as a student and eventual graduate of the College.

Past experience has shown that most of the successful candidates have usually had a secondary school background which included the following units: foreign language (ancient or modern), 2 units in each of two languages or 3 units in one language; English, 4 units; mathematics, 3 units generally, 4 units for those candidates whose major would require the inclusion of college level mathematics as part of the required curriculum; history and/or social studies, 2 units; laboratory science, 2 units.

Advanced Placement

The College offers and encourages advanced placement for students suitably prepared. The College's policy presupposes that the candidate has pursued a strictly college-level course in the subject in which he seeks advanced placement and has attained in the Advanced Placement Test of the College Board program a test score acceptable both to the Admissions Board and the chairman of the particular department concerned. Normally the lowest Advanced Placement Examination grade acceptable for advanced placement or credit or both is a 3.

Early Decision

To the superior student who has selected Holy Cross as his first choice among those colleges in which he is interested and who has taken the required College Board examinations in the junior year, the College offers an Early Decision Program which allows him to submit an application prior to November 1 of the senior year. Under this Program, the Admissions Board will evaluate the application and inform the candidate of its decision no later than December 1.

The early decision candidate who will need financial aid should file a copy of the Parents Confidential Statement with the College Scholarship Service prior to October 15 in order that the candidate may be notified of any financial grant at the time of the admissions decision.

Should the decision of the Admissions Board be negative, the candidate need not re-apply but will be required to retake all College Board examinations during his senior year as well as have an official transcript of his 7th semester grades sent to the College. His application will be given full consideration at the regular time.

The Admissions Board assumes that those candidates who apply to the Early Decision Program will definitely accept an offer of admission should it be

tendered, provided it include adequate financial aid if such is needed. Consequently, while permitting the candidate to initiate other applications, the Admissions Board requires that, upon notification of acceptance to the College, all other applications be immediately withdrawn and a validating deposit free of \$200.00 be submitted in early January.

Early Admission

Through its program of Early Admission, by which outstanding candidates enter one year early, the College also welcomes the applications of superior high school juniors, recommended by their high school officials as having already attained a high degree of personal maturity and social adjustment. Such applications must be submitted prior to August 1. The required College Board Examinations must have been taken during the junior year of high school.

Admission of Transfer Students

Application for admission with advanced standing must be completed prior to June 1, for the fall semester, prior to December 1, for the spring semester. Since Holy Cross can take a very limited number of transfer students each year, admission can be granted only to those who have completed with high grades (at least "B") courses equivalent to the courses completed by the class to which they are making application.

In order to qualify for a degree from Holy Cross, at least one-half of a student's courses, including the two full semesters of senior year, must be completed at Holy Cross.

Transfer students are not eligible to apply for scholarship awards during their first year at Holy Cross.

Admission of Special Students

Occasionally applicants who fulfill all the requirements for admission may, with the approval of the Registrar, choose special courses without following a complete degree program.

Expenses

College expenses vary with the individual, but at the present time, the minimum at Holy Cross would be about \$3,700 a year for boarding students, \$2,570 for off-campus students, and \$2,550 a year for day students. These figures include \$2,000 for tuition; \$1,130 for board and room, plus a \$20 health service fee where applicable; \$120 for textbooks and supplies; and \$430 for ordinary personal expenses. There is an application fee of fifteen dollars (\$15) which must be sent by check or postal money order, along with the pre-application card, directly to the Office of Admissions. The fee is non-refundable and not applied to any college bill. Candidates accepted for admission to Holy Cross are required to forward a nonrefundable deposit of one hundred dollars (\$100), or two hundred dollars (\$200) for students granted substantial financial aid. This deposit must be submitted by May 1 and is applied to the first semester bill. Candidates accepted for admission under the Early Decision Program must submit their deposit in January.

Course of Studies

The College of the Holy Cross offers a curriculum leading to the Bachelor of Arts (A.B.) degree with majors in biology, chemistry, classics, economics, economics-accounting, English, fine arts; history, mathematics, modern languages and literatures (French, German, Italian, Russian, Spanish), philosophy, physics, political science, psychology, sociology, and theology.

Requisite for graduation will be the successful completion of forty semester courses, five in each semester. (A semester course is a course of one semester duration for which three or four credits are granted.) The curriculum is divided into three parts: the Core, the Major, and Free Electives.

The CORE curriculum includes the following requirements: theology, two semester courses; philosophy, three semester courses; English, two semester courses; history, two semester courses; modern foreign language, two or four semester courses; and natural science, two semester courses.

A MAJOR consists of a *maximum* of fourteen semester courses, including any that may be required within the CORE. Some departments may require specific courses in allied fields.

FREE ELECTIVES may be chosen from allied or non-allied fields under the direction of the chairman of the department in which the student is to major.

Under this curriculum, most freshman programs contain four courses common to every first year student. A change of curriculum or major, therefore, if desired at the end of freshman year, will not be difficult.

Preparation for Medical or Dental School

For many years Holy Cross has maintained an excellent record in its successful preparation of students for entrance to medical and dental schools. In order to continue this record Holy Cross now offers what it believes is a most effective program for medical school preparation. A student may select any one of the 16 majors offered with the exception of Accounting and at the same time meet all requirements for admission to medical or dental school. If the applicant is offered admission as a student preparing for medical or dental school, the College will see to it that the proper science requirements are fulfilled as part of his regular course of studies. It is not necessary to select a science major. In fact, a student should select a major in which he is sincerely interested and for which he feels he is qualified. He should not select a major (e.g. biology, chemistry) because he feels that it is a requirement for entrance to medical or dental school. However, it is absolutely essential that any student seeking to qualify for medical or dental school have successfully completed a chemistry course in secondary school.

Many medical and dental schools recommend that students have completed one year of college mathematics. Such a course is **REQUIRED** for the following majors: biology, chemistry, economics, mathematics, physics, psychology. It is recommended to all philosophy majors in sophomore year and may be elected by the modern language major in either sophomore or senior year and by all other majors in junior or senior year.

Preparation for Teaching in Secondary Schools

Students who wish to prepare to teach in secondary school may elect courses in Education; the program, in practice, lays the basis for certification as a secondary-school teacher in Massachusetts.

Special Studies Program

The Special Studies Program offers the unusually capable student maximum occasion to involve himself, with other students of his age and caliber, in the investigation and interchange of new and fresh ideas, as well as in the analysis and appreciation of the old. The vitality of his intellectual experience depends upon his eagerness in grasping the opportunities granted him.

Independent research, tutorial work with faculty members, and participation in seminars are the means by which the Honors student may exercise his potential and, with the direction of his professors and the Director of Special Studies, reach that high level of maturity, responsibility, and intellectual capability for which the Program of Special Studies exists.

The Program is open to students in all fields of academic study and has two divisions: Freshman Studies, and the Honors Program which encompasses the sophomore, junior, and senior years. Although both programs are under the Committee on Special Studies, the two are separate, and inclusion in the freshman seminars and special projects does not guarantee the student admission to the Honors Program. At the same time, participation in the Freshman Studies Program is not a requisite for Honors candidacy.

Freshman Studies

The Freshman Studies Program for the promising student aims toward further articulation of advanced high school work with study on the collegiate level. It provides for advanced placement, special sectioning, and freshman seminars. It is open to students whose background and ability warrant special attention in the planning of their curriculum. The degree of advanced work possible for each student is determined by his special qualities and the requisite background demanded by the various academic disciplines.

Freshman Seminars

Seminars of no more than ten students each are offered by departments to those students whose high school work has been on an advanced or honors level. These

seminars take the place of freshman courses in the area concerned. The student may apply for any seminar which he feels qualified to undertake. Information on the seminars available and the application procedure is sent to all entering freshmen.

In 1968-69 the following seminars and special sections were offered:

Greek:	Aeschylus, Advanced Greek
Economics:	Principles of Economics
English:	Studies in Literary Criticism
History:	The Elements of Western Civilization
Latin:	Vergil's <i>Eclogues</i> and <i>The Georgics</i> ,
Mathematics:	Calculus and Algebra
Philosophy:	The Existential Approach to Man
Theology:	Archeology of Palestine and the Old Testament

Honors Program

The Honors Program begins in sophomore year and extends through the senior year. Admission to the Program is initiated through application during the second semester of freshman year. Each student's candidacy is evaluated in the light of his freshman academic performance, faculty recommendations, individual interviews, and national testing scores. Successful candidates are notified of their admission before the end of the second semester of freshman year.

The Program, which supervises the entire academic program of the student in his last three years, attempts to stimulate each student to high standards of excellence not only in his major field of study but also in his whole undergraduate career. The Program is designed to provide opportunities for Honors work in all aspects of collegiate study.

An Honors student's most important effort is in his major field. Each department of the college attempts to provide some form of special opportunity for its Honors students: seminars, tutorials, research programs, or independent study. In addition to work in his major field, each member of the Program is offered special opportunities in the core curriculum and in the area of electives. Intensive courses exclusively for Honors students are offered by the departments of philosophy and theology. These include semester courses in metaphysics and ethics in philosophy and in New Testament studies in the Theology Department. Each of these special seminar courses fulfills the collegiate requirements in these fields. Honors students may take an extra course free of charge, in some cases with a pass-fail grading system. With the approval of the Special Studies Committee and the concerned department, Honors students may take an advanced course without having the usual prerequisites for it.

Students who fail to show distinction in their work are dropped from the Program.

Fenwick Scholar Program

The Fenwick Scholar Program, begun in 1966, is open only to seniors in the Honors Program. As a Fenwick Scholar a student is free to design, with his advisor, the academic program which he believes will complete his undergraduate education in the most profitable way. Scholars are free to take courses or not, to do independent study, or to undertake a combination of courses and independent study. In choosing scholars, the Special Studies Committee seeks those students who will put this unusual opportunity to best use. Several Honors students are invited to apply for the Program in the second semester of their junior year, and appointments are announced before the beginning of senior year.

International Honors Program

As a member of the International Honors Program, the College of the Holy Cross sends one student each year through a number of foreign countries to study contemporary problems with selected scholars. The Program in 1968-1969 focused on modernization processes in Japan, Hong Kong, India, Yugoslavia, and the Middle East. This Program is open to junior year Honors students.

Student Services

The Student Health Service Program and the Student Accident and Sickness Insurance are especially designed to provide broad medical coverage and to relieve parents of possible financial strain in meeting this type of unanticipated expense.

Student Health Service Program

The College's infirmary provides board, room, limited nursing care, daily physician's visits, medicines prescribed by our staff, bandages, dressings, etc., for all boarding and off-campus resident students. All boarding and off-campus resident students are required to enroll in the Health Service Program; the fee is \$20.00 per year. Beginning with the third day of confinement, off-campus resident students will incur a nominal charge (\$5.00 per day) for room and board.

Student Accident and Sickness Insurance

Expenses incurred as a result of any accident or sickness are reimbursed by The Hanover Insurance Company, New York under a liberal schedule. Reimbursement up to \$2,750.00 is possible under the Accident Benefit Schedule while the Sickness Benefit Schedule compensates for hospital, surgical, nursing, physician's costs, etc. Charges for the Student Accident and Sickness Insurance (\$20.00 per year) together with complete information about this service will be included with the first semester bill.

Residence Hall Accommodations

Because Holy Cross is a residential college, residence hall life is a significant factor in the student's education. Each hall is administered by a corps of resident assistants who are outstanding juniors and seniors selected for their leadership ability. Resident chaplains live on each corridor to provide an opportunity for personal counseling. Social, educational, and other programs are sponsored by individual residence halls throughout the year.

The residence halls of Holy Cross have accommodations for nearly 1,900 students. Most rooms are designed for two students. Each student room is provided with the essential articles of furniture, such as beds, chairs, desks, lamps, locker, mattresses, pillows, telephones. Students contract privately with a linen service company recommended by the College which will supply and launder two sheets, one pillow case, two bath towels and two hand towels each week of the school year.

Dinand Library

The library houses a collection of over 260,000 volumes and currently subscribes to over 1300 journals in all fields of endeavor. Audio-visual resources consist of newspapers, journals, and books on microfilm, microcard, and microfiche. The New York Times holdings run from 1851 to the present. The student is afforded ample study areas in the Main Reading Room, the Stack area, the Periodical and Browsing Rooms. Most activity is realized in the Main Reading Room where thousands of reference works which span the vast areas of human knowledge, rich in subject matter and extensive in bibliography, are immediately available.

The students are instructed in the use of the library and made familiar with both the instruments and methods of research. The Periodical room affords a pleasant study atmosphere amidst a multitude of periodicals and significant periodical indices. The Browsing Room offers an air of comfort and relaxation where the student may smoke while studying or, if he prefers, may indulge in recreational reading or make use of the 3 hi-fidelity record playing units at his disposal.

The library boasts of many special collections consisting of incunabula (books printed prior to 1500), early 16th and 17th century Jesuitana, Americana (books published in America prior to 1820), manuscript collections, Louise Imogen Guiney Memorial Collection, David I. Walsh Collection and many others.

Graduate Studies Office

Most students now continue their studies beyond college. Professional studies in law, medicine and dentistry, all the varied areas of academic graduate study, programs in business administration, education and newer fields like urban affairs attract more students each year. The Graduate Studies Office exists to acquaint our students with these innumerable opportunities, to help them make

intelligent choices in their educational plans and to aid them in their search for university admission and scholarship aid.

In O'Kane 458 a special library has been assembled to provide complete information about graduate and professional studies. Catalogs of all American graduate programs and many foreign institutes may be read there in private. A large selection of excellent guides to post-baccalaureate study is available and a little independent research in these excellent sources provides a wealth of data never before available.

The Advisor for Graduate Studies has had long experience counseling individual students and welcomes them to visit him individually when they are formulating their study plans. For the past four years he has compiled and distributed to all seniors a very comprehensive guide to further study, *Graduate Opportunities*, which is in itself a mine of detailed factual information. All nominations for national competitive fellowships—the Rhodes Scholarship, the Danforth National Fellowship, the Woodrow Wilson Foundation Fellowship, the Marshall Scholarship, and the Fulbright Awards—are made through his office. It is advisable to begin preparation for these competitions early in one's scholastic career. To that end the Advisor for Graduate Studies periodically meets with members of each class to discuss their plans. This college has an excellent record of placing its graduates in challenging programs and aiding them achieve distinction and award in fellowship competitions. More than 60% of our recent classes began some form of graduate or professional study immediately after college, while an additional 10% or more returned to some form of graduate or professional study after fulfilling military or other obligations. In recent years Holy Cross graduates have included more than thirty Woodrow Wilson Fellows as well as numerous Danforth, Fulbright, Root-Tilden and National Defense Fellows. And in the past four years alone, the College has had three recipients of Rhodes Scholarships.

Counseling Services

The offices of the Deans, the Registrar, the Director of Financial Aid, the Director of Health, the Director of Placement, the College Chaplains, residence hall Chaplains, and the professional staff of the Counseling Center are available to the student for guidance and assistance.

The chairmen of the academic departments are the chief academic advisors for upper-classmen. Faculty advisors assist freshmen in academic matters.

Special faculty advisors are appointed to guide the student in preparing for professional careers and in applying for graduate fellowships.

College Chaplains are ready at all times to assist the student in the problems that assert themselves during college years. In each residence hall live several priests available for counseling.

Counseling Center

The Counseling Center offers the following programs:

FRESHMAN TESTING PROGRAM. All entering freshmen are required to participate in a testing program, the purpose of which is to determine each student's academic potential and to assess his proficiency in the learning skills which are considered important for success in studies.

FACULTY ADVISORS. During the first week of school each freshman is provided with a list of faculty advisors. The advisors are available to the students to answer questions concerning courses of study, educational and vocational goals, and the like, and to help students with any problems which may arise during the freshman year.

READING IMPROVEMENT AND STUDY SKILLS PROGRAM. Since the College realizes that even students of high intellectual promise may not do well in their studies because of poor reading or study skills, the Counseling Center offers special courses in these areas during each semester. Through instruction and intensive practice in these courses, the student acquires effective study skills and the ability to read rapidly with a high degree of comprehension. A similar program is offered during July to interested students who have completed junior or senior year of high school.

EDUCATIONAL AND VOCATIONAL GUIDANCE. Staff members are available to help students to choose worthwhile and appropriate educational and vocational goals. The Counseling Center also maintains an extensive library of literature describing the educational opportunities and the vocational areas available to college graduates.

PERSONAL COUNSELING. Professionally qualified counselors are available to help students who may be having difficulty with their studies because of personal or emotional problems.

The Counseling Center is located in Alumni 64. Students interested in the services provided may make appointments Monday through Friday, 9 A.M. to 5 P.M.

Alumni Placement Bureau

The Alumni Placement Bureau was established as a service to all Holy Cross graduating seniors and alumni. Undergraduates of all classes are also urged to utilize the facilities of the bureau.

A series of career guidance talks is held during the year in which alumni and other business and professional leaders speak informally of career opportunities.

Campus conferences with personnel officers of businesses and industrial firms, representatives of secondary schools and federal agencies are arranged by the bureau.

Henry M. Hogan Campus Center

The Henry M. Hogan Campus Center offers a wide variety of services, and houses numerous facilities, providing a broad social, cultural, educational and recreational program for the college community.

The Campus Center includes meeting rooms, lounges, bowling lanes, student organization and administrative offices, the college bookstore, a cafeteria and snackbar, private dining rooms, ballroom and party rooms, an information center, barber shop, duplicating center, and record and art print libraries. In addition, substantial day student facilities are provided to accommodate the needs of non-resident students.

The Campus Center Board of Directors represents all members of the college—students, faculty, and staff—and oversees the activity of the Campus Center, in coordination with the Campus Center staff.

In its program, the Campus Center is committed to continuing education and to complementing formal instruction with meaningful leisure time activities. Participation in and the development of mature appreciation for social, cultural, intellectual and recreational activities for the entire college community is the primary goal of the Campus Center.

Cultural Events

Each year the educational program of the college is enriched by fall and spring programs of lectures, theatrical productions, concerts, classic films series. Eminent artists, distinguished men of letters and science, political and social scientists are invited to the campus for formal and informal presentations. In addition to the campus program, the city of Worcester offers many cultural opportunities to the students at Holy Cross. Several fine museums are located in the city, including the famous Worcester Art Museum, the John W. Higgins Armory Museum and the Worcester Science Museums, as well as the Library of the American Antiquarian Society. The newly-constructed Worcester Public Library is also available to Holy Cross students. Old Sturbridge Village, a re-creation of a colonial village, is located nearby. The Annual Worcester Music Festival is a popular event for Holy Cross students.

Reserve Officers' Training Program

All students are eligible to apply for the ROTC programs of the Air Force and Navy. The Air Force program leads to a commission in the Air Force Reserve and prepares for specific duties in the Regular Air Force, the Air Force Reserve and the Air National Guard Units. The Naval ROTC program prepares qualified officers for the Navy and Marine Corps, the Naval Reserve and the Marine Corps Reserve.

Detailed information about both ROTC programs may be found elsewhere in this catalog under "Courses of Instruction."

College Organizations

Student Government

The Student Government is composed of elected representatives and officers of the student body whose purpose is to act as the official representative of the student body; to receive and express student opinion; and to advance the best interests of the student body with the administration and faculty and with other educational institutions and associations.

Honor Societies

ALPHA EPSILON DELTA

The Massachusetts Alpha chapter of Alpha Epsilon Delta was established on May 16, 1965. The international premedical society, composed of superior students, encourages excellence in pre-professional scholarship, stimulates pre-professional education in the study of the healing arts and promotes cooperation and contacts between professionals and pre-professional students and educators.

ALPHA SIGMA NU

Alpha Sigma Nu is a national honor society with chapters in Jesuit Colleges and Universities throughout the United States. It is a society organized to honor students who have distinguished themselves in scholarship, service and loyalty to their College, to promote the interests of the College, to foster all praiseworthy student activities, to unite those alumni who most fully understand and appreciate the ideals of Jesuit Education and who seek to realize those ideals in themselves and others.

DELTA EPSILON SIGMA

Delta Epsilon Sigma, a national scholastic honor society for students and graduates of Catholic colleges and universities, was first organized in April 1939, and its constitution was adopted in March, 1940. It is constituted to give recognition and encouragement to high scholarship among students of Catholic colleges and universities. Student membership is drawn from ten percent of the senior class with scholastic honor rating.

ETA SIGMA PHI

Eta Sigma Phi, the national honor society in the classics, selects as members students who distinguish themselves in the study of the classical languages. Delta Lambda chapter was established at Holy Cross in 1964.

OMICRON DELTA EPSILON

The Holy Cross chapter of Omicron Delta Epsilon, the national society in economics, selects as members students who have distinguished themselves in the study of economics. The object of the society is the encouragement of study, research and publication on economic questions. The local chapter was established in 1967.

PHI ALPHA THETA

Phi Alpha Theta, the national honor society in history, is a professional society, the objective of which is the promotion of the study of history by the encouragement of research, good teaching, publication, and the exchange of learning and thought among historians. Kappa Omega chapter was established on campus in the spring of 1966.

PI MU EPSILON

Pi Mu Epsilon, the national honor society in mathematics, promotes scholarly activity in mathematics among students in academic institutions by electing members on an honorary basis according to their proficiency in mathematics and by engaging in activities designed to promote the mathematical and scholarly development of its members. Chapters are chartered only in institutions of university grade as indicated by the high quality of its faculty and academic standards in all liberal arts departments, particularly in mathematics. Massachusetts Beta chapter was established on campus in the spring of 1967.

PSI CHI

Psi Chi, the national honor society in psychology, was established on campus in the spring of 1965. As an affiliate of the American Psychological Association, it seeks to nurture a creative atmosphere in psychology.

Professional and Departmental Organizations

AQUINAS CIRCLE

The Aquinas Circle is an organization of seniors interested in further study and discussion of philosophical problems and their correlation with modern thought in science and literature.

BIOLOGY SOCIETY

The Biology Society, composed of students majoring in biology, provides its members with the opportunity to study more intensively and critically some of the problems of that science.

BLAKELY LABOR ACADEMY

The Blakely Labor Academy, open to students majoring in economics, was organized in 1935 to encourage the study of Catholic principles applicable to the labor problems in the United States.

CROSS AND CRUCIBLE CHEMISTS' CLUB

This club is devoted to the advancement of chemistry and the development of social and professional relations among its members. The club was founded in 1927 and is open to all undergraduate students of chemistry. The club is a chapter of Student Affiliates of the American Chemical Society.

ECONOMICS CLUB

The Economics Club hopes to instill in its members both the willingness to confront the complexities of modern economic problems and the ability to pose and weigh alternatives to the questions of economic policy. At its meetings members present papers on topics of interest to the group.

FENWICK THEATRE COMPANY

The Fenwick Theatre Company is composed of those students who participate in the production of the annual season of plays in Fenwick Theatre, under the direction of the faculty of the Division of Theatre Art. Auditions for roles and interviews for staff positions are open to all students of the College on a competitive basis. See page 000, (Division of Theatre Art) for additional details.

HISTORY ACADEMY

The History Academy is open to all students interested in history. The meetings of the Academy provide an opportunity for student discussion of topics of interest to the members, for the presentation and discussion of student research papers, and for discussion of special topics with invited historians from the Holy Cross faculty and from neighboring institutions.

INTERNATIONAL RELATIONS CLUB

The club seeks to provide a campus forum for serious discussion of current international issues. The club meets regularly to hold panels and open discussions, to view films, and occasionally to hear guest speakers. All students are invited to attend and to contribute to the discussions.

ITALIAN CLUB

It is the purpose of the Italian Club to foster and promote an interest in the Italian language, culture, and literature among all students. The Club was founded in 1967.

MATHEMATICS CLUB

The Mathematics Club, established in 1946, meets regularly to discuss topics in advanced undergraduate mathematics. The purpose of the club is to promote the study of pure and applied mathematics.

PHYSICS SOCIETY

The Physics Society, composed of students interested in physics, has for its purpose the development of deeper and wider interest in that subject. Speakers from the faculty, student body and industry discuss aspects of pure physics and its applications.

ST. THOMAS MORE SOCIETY

The St. Thomas More Society is open to all who are interested in a future career in law. Through lectures and discussions by lawyers, professors and deans of law schools, students gain both a theoretical and practical knowledge of the profession.

SEMPER FIDELIS SOCIETY

The Semper Fidelis Society is a national association dedicated to the stimulation and protection of the high traditions of the U.S. Marine Corps. It is composed of selected cadets enrolled in a program leading to a commission as an officer in the Marine Corps. The Alpha Gamma chapter at Holy Cross meets regularly with distinguished guest speakers and holds an annual field trip to a Marine installation.

SOCIOLOGY CLUB

The Sociology Club seeks to stimulate in its members a greater understanding of the sociological dimensions of modern society, its issues and problems.

TRIDENT SOCIETY

The purpose of the Trident Society is to instill a greater esprit de corps among the NROTC midshipmen in both the Navy and their own unit by engendering a spirit of camaraderie through social and informational activities. A voluntary organization open to all midshipmen, the society gives them social and professional opportunities not available through individual action.

Student Publications and Communications

THE CRUSADER

The Crusader, the newspaper of the College, has been published since 1924. Its purpose is twofold: to train interested students in the art of journalism; and to secure a firmer bond among undergraduates and alumni through reporting and commenting upon the important events on and beyond the Hill.

THE PURPLE

The Purple is a magazine written, edited and published by the students of the College to provide a showcase for student writing, both critical and creative.

THE PURPLE PATCHER

The Purple Patcher, the Holy Cross yearbook, published annually by the students, is a chronicle of the activities of the past year and the history of the graduating class.

TODAY

Today endeavors to provide "instant" campus communication by publishing four times weekly. It attempts to acquaint various groups on campus with the interests and activities of other groups and also to function as an open forum for opinion.

WCHC

The campus radio station, WCHC, which began a formal broadcasting schedule on December 6, 1948, is operated entirely by student members. It provides a talent outlet and radio experience for students in its various departments: station management, programming, production, announcing, sports and news, music, sales and technical work, among others. WCHC, a CBS network station by special affiliation, has often provided local commercial stations with personnel. Many ex-staff members now have permanent careers in broadcasting.

Departmental Publications

THE CROSS PRODUCT

The Cross Product is published twice a year by members of the Holy Cross Physics Society. It serves as a medium for the publication of student research in physics and as a forum for discussion of current topics in physics.

THE CROSS AND CRUCIBLE

The Cross and Crucible is normally published four times a year by the Department of Chemistry. It provides a medium of scientific expression for chemistry students; it records work of a progressive nature done in the department; it supplements the textbooks with timely articles of general interest to the student of chemistry; and it records the abstracts of departmental seminars and theses.

Religious Organizations

COLLEGE CHOIR

The College Choir was organized to assist at chapel services and to promote devotion by acquainting students with the treasury of Church music.

CONFRATERNITY OF CHRISTIAN DOCTRINE

The Confraternity of Christian Doctrine is a student teachers unit. The purpose of the Confraternity is "to bring Christ to youth and to bring youth to Christ." Holy Cross students conduct religious doctrine classes for grammar school and high school students.

KNIGHTS OF COLUMBUS

The Crusader Council, No. 2706, was founded in March, 1929. Since that date it has been quite active. At present there are over 500 members, the greater number of whom have already graduated.

ST. JOHN BERCHMANS SANCTUARY SOCIETY

The St. John Berchmans Sanctuary Society has for its object the fostering of a special devotion in the assisting at the altar in all religious ceremonies.

SODALITY

As a means of engendering filial love and inculcating virtue in the students, the Sodality of Our Lady was established in 1844 under the title of the Immaculate Conception and with the patronage of St. Aloysius Gonzaga. The Sodality has for its object the realization of the fullness of the Christ-life through Mary, by means of the solemn consecration of its members, and their active dedication to the "way of life" of their Christian Baptism.

VOLUNTEER TEACHERS PROGRAM

Originally named the Lay Missionary Program, the Volunteer Teachers Program serves as the vehicle for the recruitment and preparation of teachers for depressed areas in the United States, and for Iraq and Jamaica. Service is for a period of from one to two years upon graduation with expenses paid. Interested students

undergo a program of orientation, interviews, information and preparation during senior year in a series of weekly meetings.

Other Organizations

B.J.F. DEBATING SOCIETY

Organized in 1846 in honor of the founder of Holy Cross College, the Most Reverend Benedict Joseph Fenwick, S.J., this society in the one hundred and twenty-three years of its existence has a tradition of excellence in public speaking. Besides its intercollegiate debating activity, the B.J.F. sponsors a number of student lectures, an annual campus oratorical contest, and an annual high school debate tournament.

BLACK STUDENT UNION

The Black Student Union is concerned with the Black student and his relation to the campus on which he functions. One of the organization's principal objectives is the broadening of the Black student's awareness of himself, his history and culture, and of his worth and potential for the future.

BRASS CHOIR

The brass choir includes a small number of musicians who perform in small concerts and chamber recitals. The instrumentation is varied, and the music is challenging for qualified brass players.

CAMPUS CENTER BOARD OF DIRECTORS

The Board of Directors provides an activities program of a social, cultural, intellectual, and recreational nature for the benefit of all members of the College. Membership is limited to six students and one member of the faculty.

CHEERLEADERS

The cheerleaders are selected and function under the guidance of the athletic department. They lead college cheers and songs at appropriate collegiate activities.

CHESS CLUB

The Chess Club is responsible for the promotion of chess instructions, matches, and tournaments within the organization and with teams representing area schools and clubs.

CHRISTIAN ENCOUNTER

This lecture series presents the student with the modern predicament. Noted intellectuals offer their resolution of the confrontation of the timeless principles of Christianity and contemporary living.

CLASS COUNCILS

Four class councils are elected to represent the interest of each of the classes in social and cultural activities.

CONCERT BAND

The concert band affords talented students the opportunity to develop their musical abilities and enjoy playing with a concert organization. A wide range of music is performed, from classical to contemporary. The band presents a number of concerts for the College and the community.

CROSS AND SCROLL SOCIETY

The Cross and Scroll Society, originally formed as the Hellenic Academy for the promotion of interest in classical studies, has through the years expanded its aims to include topics of literature, arts and general culture. Besides its group meetings, the Society sponsors public lectures, readings, and seminars.

CRUSADER DANCE BAND

The Crusaders present the modern, big band sound for dances and many other social functions. The Crosstones are a smaller combo of the Crusaders. Both groups play on campus and off, with members of the dance band sharing in the income.

CRUSADER FLYING CLUB OF WORCESTER, INC.

The Flying Club is a corporation of students established in 1966 to promote the flying of private aircraft for sport and recreation. The club owns a four-place airplane, based at Worcester Airport, and offers members instruction for a private pilot's license at reduced rates.

1843 CLUB

The 1843 Club is one of the larger organizations on the campus. Its purpose is to develop a strong bond of friendship between its members and the members of other colleges by means of social activities.

EMERALD SHIELD

A common interest in satire and the unusual provides the basis for the activities of the Emerald Shield.

GEOGRAPHICAL CLUBS

Membership in the various geographical clubs offers an opportunity for students from the same metropolitan areas to participate in social and service activities.

GLEE CLUB

Selected students, under the direction of the Vocal Music Director, present programs on campus and as representatives of the College in various community and alumni events.

GUN CLUB

The Holy Cross Gun Club is dedicated to the proper and safe use of firearms. The club wishes to promote safety and adequate knowledge of weapons for its members and the campus community. As a result, it holds functions to provide the opportunity to learn and practice such skills mainly through hunting trips, firearms competition and special classes in weapons handling and safety.

INTRAMURALS

The Intramural athletics program is one of the most active programs on the campus. Organized leagues are maintained in such sports as football, basketball, softball, tennis, golf, track, and bowling.

JAMES MADISON SOCIETY

The James Madison Society, founded to "educate for liberty and act for its preservation," offers a series of lectures and seminars on topical subjects.

MARCHING BAND

The marching band is the musical unit that performs at major athletic events of the College, including all home football and basketball games, and a number of away games. The band creates and performs original marching and musical shows which are presented at the games. Each year, the band takes two or three weekend trips, combining both musical and social activities.

POLITICAL CLUBS

A concern for partisan political activities at the local, state, and national levels sustains the activities of the Young Democrats and Young Republicans.

PURPLE KEY

It is the purpose of the Purple Key to foster loyalty and enthusiasm for the activities and goals of the College. Meaningful school spirit is encouraged by the membership of selected students.

RUGBY CLUB

The Rugby Club offers a program of instruction and competition in the international sport of rugby football. The Club has represented the College in intercollegiate competition and national tournaments.

SAILING

A member of the New England Intercollegiate Sailing Association, sailing provides competitive and instructional racing during the spring and fall seasons.

SKI TEAM

As a minor sport team under the direction of the Athletic Association, the Ski Team participates in intercollegiate competition as a member of the New England Intercollegiate Ski Conference.

SQUASH CLUB

The Squash Club, founded in 1968, offers a program of instruction and interclub and intercollegiate competition in the Massachusetts Squash League.

THE WOODWIND CHOIR

The woodwind choir is a small group of talented woodwind players who present programs of music fitted especially for this unique combination of musical instruments.

Athletics

ATHLETIC ASSOCIATION

The object of the Athletic Association is to promote the athletic interests of the college, and to discuss and determine matters of management pertaining to the welfare of collegiate and intercollegiate sports.

INTRAMURAL ATHLETICS

This most flourishing co-curricular activity brings the advantages of healthy and competitive indoor and outdoor sports to very many undergraduates through a year-long program of games and tournaments.

ATHLETIC STAFF

Vincent G. Dougherty, Ph.B., LL.B.	<i>Director of Athletics</i>
Joseph W. McDonough, B.S.	<i>Business Manager of Athletics</i>
Rev. John F. Devlin, S.J., M.A., S.T.L.	<i>Chaplain</i>
Rev. Francis J. Hart, S.J., M.A.	<i>Director of Intramurals</i>
Richard R. Lewis	<i>Director of Sports Information</i>
William G. Whitton, B.A.	<i>Coach of Football</i>
Francis P. Donaher, M.S.	<i>Assistant Coach of Football</i>
Thomas G. Faulkner, A.B., M.A.	<i>Assistant Coach of Football</i>
Dennis C. Golden, B.S.	<i>Assistant Coach of Football</i>
Robert C. Norton, A.B.	<i>Assistant Coach of Football</i>
David A. Scarpino, B.S., M.A.	<i>Assistant Coach of Football</i>
Thomas Yewcic	<i>Assistant Coach of Football</i>
John P. Donohue, M.A.	<i>Coach of Basketball</i>
Francis McArdle, B.A.	<i>Assistant Coach of Basketball</i>
Thomas F. Duffy, B.S.	<i>Coach of Track</i>
Richard Donohue, B.S.	<i>Assistant Coach of Track</i>
W. Harold O'Connor, B.S.	<i>Assistant Coach of Track</i>
Robert T. Curran, B.S.	<i>Coach of Baseball</i>
Ralph Raymond, B.S.	<i>Assistant Coach of Baseball</i>
Gerald R. Anderson, A.B.	<i>Coach of Golf</i>
Walter H. Kane	<i>Coach of Hockey</i>
Robert Skinner, B.S.	<i>Assistant Coach of Hockey</i>
Doctor S. Wylie, D.D.S.	<i>Coach of Wrestling and Lacrosse</i>
Ronald P. Chiras	<i>Assistant Coach of Lacrosse</i>
Nicholas Sharry, A.B.	<i>Coach of Tennis</i>
Paul Parenteau	<i>Coach of Swimming</i>
Ronald P. Johnson.	<i>Coach of Crew</i>
John C. Scott	<i>Trainer</i>
Walter M. Mulvihill, M.D.	<i>Physician</i>
Francis H. Carr, M.D.	<i>Physician</i>

Expenses and Financial Aid

Expenses

Tuition

All Classes	\$2,000
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Board and Room

All Classes	1,130
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Student Health Service Program

All Boarding and Off-Campus Students	20
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Application Fee

A fee of \$15 (non-refundable) must accompany all applications for admission to the College.	15
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Acceptance Deposits

Candidates, usually notified of acceptance from January to April, are obliged to forward a non-refundable reservation deposit of \$100. For students accepted under the Early Decision Plan and for all Financial Aid Awardees the required deposit fee will be \$200. This fee must be submitted by May 1, and will not, under any circumstances, be refunded. The amount deposited will be credited toward payment of the first semester bill.

Room Deposits

All students who wish to reserve a room on campus during the next academic year, must signify their intent and pay a non-refundable room deposit of \$100 by May 15. This deposit will be credited at the rate of \$50 per semester toward room charges.

Audit: (per Semester hour).....	\$65
Clerical Charge: (Late payment of Semester fees).....	10
Examination, Absentee: (\$5 per exam, but not to exceed a total of \$15).....	5
Examination, Conditional: (Freshmen, first Semester only).....	5
Extra Course Fee: (per semester hour).....	65
Graduation Fee: (Second Semester, senior year).....	15
Late Registration Fee:	10
Program Schedule Change: (Includes Section Change, Course Change, Add a Course, Withdrawal from Course).....	5
Reading Clinic Fee:	30
Transcript:	1

Payment of Bills

Bills for one-half of each of these fees will be issued not later than two weeks prior to the opening of each semester, and are due and payable by the date indicated on each statement rendered. Payment is to be made by check or money order, payable to the COLLEGE OF THE HOLY CROSS, and sent to the Treasurer, College of the Holy Cross, Worcester, Massachusetts 01610.

Installment Payments

No provision is made for installment payment, whether monthly, quarterly or otherwise, directly with the College. Parents who wish to make such arrangements should do so with a bank or other commercial firm that handles such financing.

Education Funds, Inc., 10 Dorrance Street, Providence, R.I. 02901, Funds for Education, Inc., 319 Lincoln Street, Manchester, New Hampshire 03103, and Tuition Plan, Inc., 575 Madison Avenue, New York, N.Y. 10022 are three of the many firms which write contracts for installment payments.

Many states have a bank guarantee program for long-term, low-interest education loans. Certain religious, labor and service organizations, as well as some companies also have loan programs available to members or employees.

Parents should investigate and evaluate the different programs before committing themselves to a particular repayment schedule. Whenever required, the College will be happy to cooperate with parents in arranging for any loan program that will make it easier for parents to meet the College's own requirements that semester fees must be paid in advance of registration.

Refunds of Tuition, Board and Room

During the first six weeks of each semester, there will be a proportional refund of tuition; after six weeks, there will be no refund.

Once a student has contracted for and occupied a room on campus there will be no refund of the semester fee.

During the semester there will be a proportional refund of board charges for students who withdraw or move off campus.

Telephones

The College provides a telephone in each student room. No fee is charged and the telephone may be used both for intra-campus calls and, on an unlimited no-fee basis, for off-campus calls to the areas listed in the Worcester Directory. Toll calls are billed directly to the student at cost.

Toll Calls

Toll calls are the personal responsibility of the student(s). Toll calls made from a student telephone and reverse-charge calls received, will be automatically billed by the Telephone Company to the student telephone involved. Such charges must be paid to the Telephone Company either at the sub-office in the Treasurer's Office or at any other Bell Telephone Office.

Non-Payment of Telephone Bills

The College assumes no responsibility for supervising collection of telephone bills. The Telephone Company has informed the College that if such bills are not paid by the next billing date after the charge is made, service will be discontinued. If payment is not made within one week after discontinuance of service, the Company will remove the instrument. Re-installation will not be permitted until all charges are paid and a re-installation fee collected in advance.

Financial Aid

In order that the opportunity for an education at Holy Cross College may be within the reach of as many qualified young men as possible, the College offers scholarships, loans, and employment, either singly or in combination, to those who could not otherwise afford such an education. Awards are based on academic promise, high qualities of character and citizenship, and demonstrated financial need. This past year over 60 percent of the freshman class were receiving some form of financial assistance.

To apply for aid a student need only indicate on his application for admission that he would like to be considered for financial assistance. There is space provided for this purpose on the second page of the application form. The only other requirement would be submitting the Parents' Confidential Statement to the College Scholarship Service, preferably before January 15. This form (P.C.S.) is available at the applicant's secondary school and is used to determine the amount of assistance a student will need to attend the College for one year. Aid candidates are usually notified of financial awards from the College at the same time that they are informed of the decision on their application for admission. Students can expect to receive notification in March or April after all the necessary credentials have been received and evaluated.

Scholarships

Last year, over two-hundred entering freshmen were awarded scholarships with stipends ranging from \$200 to as much as \$3,000 depending upon the student's financial need. Each applicant is considered for all awards for which he may be eligible, including many endowed* and restricted scholarships, as

*A list of endowed scholarships begins on page 178.

well as several Holy Cross Alumni Club grants. In general, scholarships and/or additional assistance will be renewed each year provided the student continues to maintain a satisfactory level of achievement. Stipends, however, may be adjusted where the family resources decrease or increase significantly. There are a limited number of honorary scholarships awarded in recognition of scholastic excellence and where financial need is not a factor. Recipients of such awards are not required to file the Parents' Confidential Statement.

In addition to awards made from College funds, many students will receive scholarship assistance from corporations, foundations, civic groups, parent and school associations, and service clubs. Every student who is interested in helping himself financially should be alert for information about any outside scholarship aid for which he must apply independently.

Loans

1. Federal Guaranteed Loan Program: Under the terms of the Higher Education Act of 1965, students may borrow funds for college expenses from banks or other incorporated state lending agencies entirely apart from the College. It is recommended that the student borrower apply at a home town bank, preferably one with which he and his parents do their banking. The amount loaned to a student may vary from state to state. The rate of interest is 7% and if a student borrower's adjusted family income is under \$15,000 a year, the Federal Government will pay the bank interest on the loan while the student is in college. Principal repayment may be deferred while the student continues his studies, or while he serves in the Peace Corps or in the Armed Services. Incoming freshmen are urged to investigate this program at their local banks.

2. National Defense Student Loan Program: Holy Cross College administers loans to undergraduates from funds under Title II of the National Defense Education Act of 1958. Unless deferred or cancelled in accordance with the terms of the act, loans made under the N.D.S.L.P. are due and payable ten months after graduation or upon leaving college, and must be repaid within a ten-year period from that date. An interest rate of 3% is charged, when the loan becomes due. The maximum loan in any one year is \$1,000. and the total loan may be \$10,000. throughout a student's education in college and graduate school.

Due to the limited amount of funds appropriated by the Congress, priority for loans under this program will be extended to students from states or areas in which loans made under the Federal Guaranteed Student Loan Program are not easily available. Ordinarily, before approving a National Defense Student Loan, the College will require evidence that the student's application for a Guaranteed Loan has been refused.

Employment

In addition to scholarships and loans, employment is available to students as part of the financial aid package. Campus jobs as well as the Federal Work-Study Program provide the opportunity to earn between \$200 and \$600 per academic year. No entering Freshman should count on earning any substantial sum through work unless he has a definite promise of employment before the opening of College in September. Wages are based on an hourly rate and are paid directly to the student. There are miscellaneous jobs in the Worcester Community and the Financial Aid Office will serve as a "clearing house" for such opportunities.

The Financial Aid Committee expects families to give assistance to the extent they can, both from income and from assets, and the Committee follows quite closely in its calculations the policies and practices developed by the College Scholarship Service. The Committee understands that the actual amount of help offered at any income level will vary widely according to special circumstances—savings, investments, medical bills, debts, educational costs of children in college, and other obligations.

For additional information on financial assistance, address inquiries to:

Office of Financial Aid
Fenwick Hall
College of the Holy Cross
Worcester, Massachusetts 01610

Academic Policies

General

The college year is constituted of two semesters of sixteen weeks each.

College curricular requirements are stated in terms of semester courses, but each such course is weighted, for purposes of computing averages, according to its semester hours of credit. A semester hour represents a course which meets once a week throughout a semester. In ordinary lecture courses, the class period is of fifty minutes duration; in laboratory work, the length of the period required for earning a semester hour of credit is at least twice the length of the ordinary lecture period. There are nine class periods each day, Monday through Friday. Class or laboratory periods begin at 8:30 A.M.

Registration

Information and instructions concerning registration are distributed by the Office of the Registrar to all students approximately one month in advance of the beginning of each semester.

Formal registration takes place immediately preceding the opening of classes each term. Late registration and changes of courses are permitted during the first two weeks of each semester. Withdrawal from a course may be permitted during the first ten weeks of the term, with grades recorded as outlined below.

A normal program consists of five semester courses in each term. Except for ROTC courses, additional courses are not permitted to freshmen or sophomores. A sixth course may be taken by juniors or seniors, with the approval of the Director of the Special Studies Program, in the case of Honors students, or with that of the Dean, in the case of other students having a Q.P.I. of 3.000 or better. No student may register for more than six courses in any term.

Each student's program must receive the approval of the chairman of his major department, or a delegated academic advisor.

Failure to comply with the procedures specified by the Registrar for registration, changes of course, and withdrawal from a course, will result in either denial of credit or deficiency in the course.

Degree Requirements

The College offers two degrees in course: the Bachelor of Arts (A.B.) and the Master of Science (M.S.) in Chemistry.

The Bachelor of Arts degree includes 15 to 17 *core* courses in English, modern language, history, philosophy, theology and science, up to a maximum of 14 courses in a *major* field, and the remainder in *free electives*, to a total of 40 courses. More details are found on p. 39, and in later sections, under the several departments offering majors. All majors qualify for the Bachelor of Arts degree.

In order to qualify for a degree from the college, at least one-half of a student's courses, including the two full semesters of senior year, must be completed at the College of the Holy Cross.

The Master of Science degree, given only in Chemistry, requires 30 semester hours of credit and an experimental thesis; the program is described more fully on p. 81.

Grading System

A student's standing will be determined by the results of examinations, classroom work and assignments. Only one grade will be submitted for each course for each student, each semester; this will be a composite grade for recitations, reading assignments, classroom discussions, tests, etc., and the final examination (which will normally carry one-third weight in determination of the composite grade). This grade will be submitted by the professor to the Registrar after the final examination.

Grades will not be translations of numerical scores, but estimated on the following bases: well-organized preparation and presentation of the subject matter; correct oral and written usage of English, successful completion of assignments, tests, readings, and examinations; application and participation in the classroom; imagination and initiative.

Reports of academic grades are sent to the student, and to his parents or guardian, at the end of each semester, as soon as all financial obligations have been fulfilled.

Grades

The following symbols are used to indicate the quality of the student's work in each course:

<i>Symbol</i>	<i>Description</i>	<i>Quality Point Multiplier</i>
A	Excellent	4.0
B+		3.5
B	Good	3.0
C+		2.5
C	Fair	2.0
D+		1.5
D	Low Pass	1.0
X	Removed Conditional Failure	1.0
F	Failure (Deficiency)	0.0
WF	Withdrawal while Failing (Deficiency)	0.0
WP	Withdrawal while Passing	
W	Withdrawal without Prejudice	

Grades (continued)

CO	Conditional Failure
AU	Audit
AB	Absence from Final Examination
I	Incomplete
S	Satisfactory ("Pass")
U	Unsatisfactory ("Fail")
J	Grade not submitted

The grade CO may be given by the instructor to a freshman who presents satisfactory work in his first semester but fails the final examination in such a way that the composite grade is failing. The student is then allowed a Conditional Examination, success in which leads to a Low Pass (X), but failure to a deficiency (F).

The grade CO or AB is changed to F unless the Conditional or Absentee Examination is successfully taken at the time appointed by the Registrar. The grade I becomes an F unless the missing work is submitted within one week after the final examination in the course. Exceptions to these regulations will be granted only by the Dean of the College, and only upon written petition.

The grade X ordinarily indicates that a first semester freshman has achieved a Low Pass by passing a Conditional Examination. It may also signify that a freshman, or other student engaging in the subject for the first time, has removed a deficiency incurred in one of certain first semester courses, by passage of the second semester of the same course with a grade of C or better.

Withdrawal from a course, with approval, during the first two weeks of a term leads, if it is not replaced by another course, to the grade W. After the second week, withdrawal with approval will be graded WP or WF according to the judgment of the instructor. Withdrawal from any course after the tenth week leads automatically to a WF, as does withdrawal without approval at any time.

The grades S and U are the so-called "Pass/Fail" grades, and may be used only in those courses for which the Dean of the College has given prior written approval.

Quality Points

Each of the Grades from A to WF in the above list is assigned a multiplier, as indicated, which weights the grade in computing averages. Multiplying this weighting factor by the number of credit hours assigned to the course gives the quality points earned in it.

None of the other grades in the above list carry quality point multipliers; credits associated with such grades are not used in calculating averages.

Quality Point Index

Dividing the total number of quality points achieved in all courses by the number of credit hours assigned to these courses determines the Quality Point Index (Q.P.I.), or scholastic average.

If the credits and quality points are earned in a single semester, the average so calculated is the Semester Q.P.I.; if all the student's credits and quality points to date are used, the calculation yields his Cumulative Q.P.I.

Honor Grades

The following criteria determine Honor Grades:

Dean's List

<i>First Honors:</i>	A semester Q.P.I. of 3.700 or above.
<i>Second Honors:</i>	A semester Q.P.I. of 3.500 to 3.699.

Graduation Honors

<i>Summa Cum Laude:</i>	A cumulative Q.P.I. of 3.870 or above.
<i>Magna Cum Laude:</i>	A cumulative Q.P.I. of 3.700 to 3.869.
<i>Cum Laude:</i>	A cumulative Q.P.I. of 3.500 to 3.699.

In calculations of the Q.P.I. for the Dean's List or for Graduation Honors, only those credits and quality points earned at Holy Cross (including those earned during Junior Year Abroad) may be counted.

Requirements for Advancement

To be eligible for academic advancement a student must be free of all unremoved deficiencies and meet the minimum cumulative average requirements given in the next section.

Academic Probation

Academic Probation is not a penalty, but a warning and an opportunity for improvement; probationary status has a duration of one semester, and is determined by a student's low cumulative average (Q.P.I.) at the end of the preceding semester, unless this has been sufficiently improved by success in an intervening summer session.

As soon as a student is placed on, or removed from, probation, he will be notified in writing by the Registrar of such action; copies of the notice will be sent to his parents and advisor.

The following rules delineate the limits of academic probationary status.

FRESHMAN YEAR

Any freshman having a cumulative average of 1.500 but less than 1.750 at the end of the freshman year will be on probation for the first semester of sophomore year.

SOPHOMORE YEAR

A sophomore with a cumulative average of 1.750 but less than 2.000 at the end of first semester will be on probation for the second semester of sophomore year.

A sophomore with a cumulative average of 1.850 but less than 2.000 at the end of the sophomore year will be on probation for the first semester of junior year.

JUNIOR YEAR

A junior with a cumulative average of 1.950 but less than 2.000 at the end of the first semester will be on probation for the second semester of junior year.

A junior with a cumulative average of 1.950 but less than 2.000 at the end of junior year will be liable to dismissal or placed on probation for the first semester of senior year at the discretion of the Committee on Academic Standing.

SENIOR YEAR

A senior with a cumulative average of 1.950 but less than 2.000 at the end of the first semester will be on probation for the second semester of senior year.

Any senior who does not have a cumulative average of 2.000 or better at the end of senior year will not graduate.

Removal of Probation or Deficiency

Probationary status is ordinarily removed by the achievement, in the next semester, of the cumulative average required for the later semester. Grades of C or better, earned in Summer Session courses approved in advance by the Dean, may be accepted in transfer by the College for the improvement of one's Q.P.I. Credits and quality points accepted in transfer will be recorded on the student's permanent record, and included in the calculation of his cumulative average, for all purposes other than the award of honors.

Each deficiency must be removed by a grade of C or better, earned in a Summer Session course approved in advance by the Dean, in the summer immediately following its incurral. The credits attempted in the failed course will remain on the student's transcript, and will be used in calculating his average; credits and quality points accepted in transfer to remove the deficiency will be recorded and used in calculation of the Q.P.I., except for the award of honors.

Deficiencies may not be made up by taking extra courses in subsequent terms. An exception may be made for failure of a course in the first semester of senior year.

Concurrent Registration

In 1967, the six four-year colleges and four two-year colleges in the Metropolitan Worcester Area formed the Worcester Consortium for Higher Education. Through cross registration, joint faculty appointments and curriculum projects, and other efforts, the Consortium explores ways of broadening academic programs for faculties and students as well as expanding continuing education opportunities and community service activities.

With the permission of the Dean, students enrolled at the College of the Holy Cross may register for courses at Consortium institutions.

Transfer of Credit

Acceptance of work done at other institutions will be affirmed promptly in writing, at the time of readmission, or of admission to advanced standing or advanced placement with credit. All such courses, credits, grades and quality points will be entered on the record at the time of acceptance. No renegotiation of such acceptances will be made at any subsequent time, after further work has been undertaken. Such transferred credits will be included in the calculation of the student's average, except for the determination of semester or graduation honors.

Junior Year Abroad

A limited number of students who give promise in their first two years that they will make good use of the advantages of study in another culture may be approved for the Junior Year Abroad Program. Applicants must have the approval of the Faculty Committee on the Junior Year Abroad, and present a proposed plan of study acceptable to their major advisor and the Dean. Approval is currently granted for study at a number of European universities; the College is an Affiliated Institution of the Institute of European Studies.

Participation in this program is normally limited to students with B averages (Q.P.I. of 3.000 or better) for their first two years; ordinary participation in the program begins with the fall semester, and lasts for one full academic year.

Students in the Junior Year Abroad Program are considered fully enrolled students of the College of the Holy Cross during that year. Credits and quality points earned in the program are included in all calculations of academic averages, including those which determine semester or commencement honors.

Voluntary Withdrawal from the College

A student who withdraws voluntarily from the College is entitled to separation in good standing under the following conditions:

1. He must not be liable to dismissal for disciplinary reasons.
2. He must not be liable to dismissal for academic reasons.
3. He must return all College property.
4. He must settle all financial indebtedness with the College.
5. He must properly notify the Dean of his intention to withdraw.

Academic Dismissal

A student will be required to withdraw from the College if he has become liable for a third successive semester on probation, or if he fails to achieve, at the end of any semester, the minimum quality point average specified above for probationary status, or if he has acquired three or more failures (*F* or *WF*) during any academic year.

A student may be required to withdraw from the College if he has incurred probation for the first semester of senior year, or if he has acquired a total of six or more failures at any time during his four years, even though some of the deficiencies have been removed by attendance at summer session.

Any academic dismissal precludes the possibility of readmission before two full semesters intervene, during which time the student must have attended another accredited institution of higher learning.

Readmission to the College

Students who have withdrawn in good standing or have been dismissed with the right to reapply and wish to be readmitted to the College must apply to the Registrar. All application materials requested by the Registrar (completed application form, transcripts of all intervening academic work, letters of recommendation, statements of good standing) must be in his hands by June 1, for fall readmissions, by December 1, for spring readmissions.

Readmission is not automatic, even for voluntary withdrawnees, and may depend on the availability of space.

Transcripts of College Record

On leaving the College, each student is entitled to a transcript of his record, free of charge, if his financial obligations to the College have been fulfilled. For additional transcripts a fee of one dollar will be charged.

No transcripts will be issued during the periods of Commencement, Registration, or Final Examinations.

Courses of Instruction

DEPARTMENT OF

Aerospace Studies

Professor: Millspaugh (Chairman)

Assistant Professors: Emmonds, Ticknor

The mission of the Air Force Reserve Officers Training Corps is to commission career oriented officers to meet specific Air Force requirements through on-campus college programs. The Air Force ROTC objective is to place on active duty lieutenants who demonstrate dedication to their assignments; willing acceptance of responsibility; critical and creative thinking; and the ability to speak and write effectively.

Air Force ROTC is the largest source of officers for the United States Air Force. The College of the Holy Cross is one of 175 colleges and universities throughout the country providing Air Force ROTC Training.

The basic qualifications for enrollment in the Air Force ROTC program require a student to be a male citizen of the United States of good moral character and sound physical condition.

The ROTC Vitalization Act of 1964 (Public Law 88-647) provided legislative authority for the creation of a totally new and flexible Air Force ROTC program geared to the changing patterns of higher education and the needs of tomorrow's Aerospace Force. It authorized two separate Air Force ROTC programs on campus:

TRADITIONAL FOUR-YEAR AFROTC PROGRAM:

1. General Military Course is required for freshmen and sophomores; one credit per semester.
2. Professional Officer Course is required for juniors and seniors; three credits per semester.
3. Summer Field Training of four weeks duration is required between the junior and senior years at an Air Force base.
4. Cadet Military Training for one hour per week is required for all cadets.
5. Flight Instruction Program is available for all qualified senior cadets interested in becoming Air Force pilots. Each potential pilot receives $36\frac{1}{2}$ flying hours at the local airport near the College campus. Also, he can qualify for a civilian pilot's license. All of this flying training is at no expense to the cadet.

6. Financial benefits exceed \$1000.00. All cadets are provided uniforms and textbooks for AFROTC courses. Junior and senior cadets receive \$50.00 monthly pay, which is non-taxable, and approximately \$150.00 for the Summer Field Training plus travel pay to and from the Air Force base. A junior or senior cadet is entitled to free transportation on military aircraft if space is available and travel by railroad at the special military half-fare rate.
7. Draft deferment from induction in the Armed Forces under the Universal Military Training and Service Act is granted selected cadets.
8. Graduate Study is encouraged. The newly commissioned lieutenant is not required to serve on active duty immediately after graduation from the College of the Holy Cross, if he intends to obtain a graduate degree. The Air Force will defer his active duty until graduate study, including Law or Medical School, is completed.
9. Scholarships for tuition costs are available to a limited number of cadets for their freshman, sophomore, junior and senior years. Applications must be made during the year prior to anticipated receipt of the scholarship. Selection will depend mainly on three factors; score on the Air Force Officer Qualifying Test; grade average (Quality Point Index) for all college work completed; and the assessment by a Scholarship Review Board. Entering freshmen should apply to AFROTC Headquarters, Maxwell AFB, Ala., during their senior year at high school. Details on the AFROTC scholarship program can be obtained from their high school counseling office.
10. Supplementary activities are conducted in connection with the College Air Force ROTC program, but are not regularly scheduled and do not interfere with the students' academic time. These activities include visits to Air Force bases, orientation flights, welfare projects, athletic participation, social functions, career counseling and general guidance assistance.

NEW TWO-YEAR AFROTC PROGRAM:

1. A student with two years of undergraduate or graduate study remaining may apply in the academic year preceding those two remaining years. This is necessary to test the applicant, to process the application and test results, and to select the qualified candidates for AFROTC enrollment.
2. Summer Field Training of six weeks duration is required at an Air Force base prior to enrollment in the Professional Officer Courses of the AFROTC curriculum.
3. Professional Officer Course is required for juniors and seniors; three credits per semester.

4. Flight Instruction Program is available for all qualified senior cadets interested in becoming Air Force pilots. Each potential pilot receives 36½ flying hours at the local airport near the college campus. Also, he can qualify for a civilian pilot's license. All of this flying training is at no expense to the cadet.
5. Financial benefits exceed \$1000.00. All cadets are provided uniforms and textbooks for AFROTC courses. Junior and senior cadets receive \$50.00 monthly pay, which is non-taxable, and approximately \$135.00 for the Summer Field Training plus travel pay to and from the Air Force base. A junior or senior cadet is entitled to free transportation on military aircraft, if space is available, and travel by railroad at the special military half-fare rate.
6. Draft deferment from induction in the Armed Forces under the Universal Military Training and Service Act is granted to all cadets.
7. Graduate study is encouraged. The newly commissioned lieutenant is not required to serve on active duty immediately after graduation from the College of the Holy Cross, if he intends to obtain a degree. The Air Force will defer his active duty until graduate study, including Law or Medical School, is completed.
8. Supplementary activities are conducted in connection with the college Air Force ROTC program, but are not regularly scheduled and do not interfere with the students' academic time. These activities include visits to Air Force bases, orientation flights, welfare projects, athletic participation, social functions, career counseling and general guidance assistance.

AS 100

World Military Systems.

An introductory course exploring the causes of the present world conflict, the role and relationship of military power to that conflict and the responsibilities of an Air Force officer. This includes a study of the interrelationship of national power factors and the role of military power as a facet of national policy. A study of world military forces is begun through treatment of the Department of Defense and the doctrine, mission and functions of the United States Air Force.

Two credit hours.

AS 200

World Military Systems.

AS 200 continues the study of world military forces and the political-military issues surrounding the existence of these forces. This includes a study of the United States Army and the United States Navy, their doctrines, missions and employment concepts; a comparative analysis of the Democratic and Communist ideologies; a study of the military forces of NATO, CENTO, SEATO, and their role in free world security. The AS 200 phase concludes with an analysis of the trends and implications of world military power.

Two credit hours.

AS 300

Growth and Development of Aerospace Power.

A survey course concerned with the nature of war; development of airpower in the United States; mission and organization of the Defense Department; Air Force concepts, doctrine, and employment; astronautics and space operations; and the future development of aerospace power.

Six credit hours.

AS 400

The Professional Officer.

AS 400 includes the meaning of professionalism, professional responsibilities, the military justice system; leadership theory, functions; problem solving; functions and practices; management principles and functions; and management tools, practices and controls.

Six credit hours.

DEPARTMENT OF

Biology

Professors: Flavin (*Chairman*), Lingappa

Associate Professors: Campbell, Crowe, Delaney, McSweeney

Assistant Professors: Healy, Roffman

The biology curriculum is designed to provide our majors a program with the scope and depth needed for entrance to graduate school and one which, within the limits imposed by the size and backgrounds of the staff, available space, facilities and equipment, can be adapted to meet the diverse interests of potential biologists. All biology majors are required to take a two semester General Biology course (Biol. 11-12), one course from each of four core areas and at least two additional courses from one of these core areas. Biology majors must also take a minimum of four courses in chemistry, including organic chemistry, a minimum of two courses in physics and a minimum of two courses in mathematics.

The core areas and the courses offered are as follows:

AREA 1: *Molecular and cellular biology*

Biol. 101: Biochemistry

Biol. 104: Microbiology

Biol. 108: Endocrinology

Biol. 110: Histochemistry

AREA 2: *Organismic biology*

Biol. 54: Comparative chordate anatomy

Biol. 65: Histology

Biol. 102: Physiology of cells and tissues

Biol. 116: Biology of interspecific interactions

AREA 3: *Developmental biology*

Biol. 21: Vertebrate embryology

Biol. 45: Human genetics

Biol. 46: Genetics and evolution

Biol. 61: General genetics

Biol. 106: Animal cell and organ culture

Biol. 114: Experimental morphogenesis

AREA 4: *Environmental biology*

- Biol. 48: Introduction to field biology
- Biol. 58: Population ecology
- Biol. 59: Systematics and evolution
- Biol. 105: Environmental microbiology
- Biol. 112: Community and ecosystem ecology
- Biol. 115: Introduction to the aquatic sciences
- Biol. 203: Modes of speciation

Obviously, not all the courses listed below are offered every year. However, in the course of his four years a student will have the opportunity to enroll for any of these courses.

In addition, Biology 201-202 (Undergraduate research) affords qualified students an opportunity to do research under the supervision of a staff member. Honors candidates must elect Biology 201-202.

BIOLOGY 11-12.

General Biology.

The course is divided into three basic sections: the Biology of cells, organisms and populations. In this sequence one proceeds from a study of the fundamental particles of biological systems through the more complex organisms to the inter-relationships of the multicellular organism with the environment. The laboratory serves as a necessary complement to the principles section in that it offers for examination those organisms that best illustrate the principles previously examined in theory. Three lectures and one laboratory period.

Eight credit hours.

BIOLOGY 21.

Embryology.

An introductory study of developmental processes in animals and, to a lesser degree, in plants. Analysis of those factors and mechanisms which integrate and coordinate these developmental processes is included. Three lectures and one laboratory period.

Four credit hours.

1st sem. 1969-70

BIOLOGY 41-42.

Biological Sciences.

An introduction to the major themes and principles of modern biology. This course is designed for students who are non-science majors and who must fulfill the natural science requirements. Three lectures a week.

Six credit hours.

1st and 2nd sem. 1969-70

BIOLOGY 45.

Human Genetics.

Fundamentals of human heredity and variation. Cultural and sociological implications. Individual, family and population aspects. Three lectures and one optional laboratory period.

Three or Four credit hours.

1st sem. 1969-70

BIOLOGY 46.

Genetics and Evolution.

Fundamentals of the genetic basis of unity and diversity among plants and animals. Integration of genetics with the principles and mechanisms of the evolutionary process. Evolutionary origin of living matter, species and higher groups. Three lectures and one optional laboratory period.

Three or Four credit hours.

(Not offered 1969-70)

BIOLOGY 48.

Introduction to Field Biology.

An introductory study of the taxonomy, natural history and ecology of animals and plants with emphasis on the relationships between organisms and their natural habitat. Prerequisite: permission of the instructor. Lectures and laboratory by arrangement.

Four credit hours.

(Not offered 1969-70)

BIOLOGY 54.

Comparative Chordate Anatomy.

A study of the anatomy, evolution and taxonomic relationships of chordates. Three lectures and one laboratory period.

Four credit hours.

2nd sem. 1969-70

BIOLOGY 58.

Population Ecology.

A detailed examination of the structure and dynamics of populations as studied in the field and laboratory. Three lectures and one optional laboratory period.

Three or Four credit hours.

1st sem. 1969-70

BIOLOGY 59.

Systematics and Evolution.

A study of the concepts of modern evolutionary biology with emphasis on the various factors underlying the mechanisms of evolution. Three lecture hours.

Three credit hours.

2nd sem. 1969-70

BIOLOGY 61.

General Genetics.

A study of the principles and mechanisms of inheritance and variation. Three lectures and one laboratory period.

Four credit hours.

(Not offered 1969-70)

BIOLOGY 65.

Histology.

A study of the microscopic and submicroscopic structure of vertebrate tissues and organs. Three lectures and one laboratory period.

Four credit hours.

1st sem. 1969-70

BIOLOGY 101 (formerly 63).

Biochemistry.

A study of the fundamental chemical processes of living matter. Three lectures and one laboratory period.

Four credit hours.

1st sem. 1969-70

BIOLOGY 102.

Physiology of Cells and Tissues.

A study of cellular function in relation to structure, with special emphasis on cell surfaces, cellular energetics and the reactions of macromolecules. Three lectures and laboratory by arrangement.

Four credit hours.

2nd sem. 1969-70

BIOLOGY 104 (formerly 64).

Microbiology.

A study of bacteria, yeasts and molds, with emphasis on their morphology, physiology and genetic relationships. Three lectures and one laboratory period.

Four credit hours.

(Not offered 1969-70)

BIOLOGY 105.

Environmental Microbiology.

Survey of special groups of micro-organisms native to soils and their role in geochemical transformations. Microbiology of air and water. Air and water pollution. Biodegradation of human and industrial wastes. Dissemination and survival of microorganisms in the environment. Prerequisite: Permission of the instructor. Lecture and laboratory by arrangement.

Four credit hours.

(Not offered 1969-70)

BIOLOGY 106.

Animal Cell and Organ Culture.

An empirical study of animal cells in single and aggregate isolation *in vitro*. Emphasis is placed upon system design for the study of specific problems in the fields of cytogenetics, cytochemistry, histogenesis and tumorigenesis. Three lectures and one laboratory period.

Four credit hours.

2nd sem. 1969-70

BIOLOGY 108.

Endocrinology.

A study of the structure, function and secretions of the endocrine glands with special emphasis on the molecular aspects of hormonal action. Three lectures and laboratory by arrangement.

Four credit hours.

(Not offered 1969-70)

BIOLOGY 110.

Histochemistry.

A study of the principles and techniques used to detect and localize enzymes and other biologically important substances in cells and tissues. Three lectures and one laboratory period.

Four credit hours.

2nd sem. 1969-70

BIOLOGY 112.

Community and Ecosystem Ecology.

An analysis of the interactions among populations of different species and between populations and their physical environment. Prerequisites: Biology 58 and permission of the instructor. Three lectures a week.

Three credit hours.

(Not offered 1969-70)

BIOLOGY 114.

Experimental Morphogenesis.

A study of the origin of form and pattern in developing systems. The course will focus on important concepts in development and on modern methods for developmental studies. The classical experiments of embryology will be reevaluated in the light of recent advances. Three lectures and one laboratory period by arrangement. Prerequisites: Biology 21 and permission of instructor.

Four credit hours.

2nd sem. 1969-70

BIOLOGY 115.

Introduction to the Aquatic Sciences.

The course will be a general survey of the major aquatic habitats. The topics covered will include: the properties of water, the fundamental classification of habitats, the major physical and chemical variations in the habitats, the structure of biological communities. The emphasis of the course will be the interaction of the physical, chemical and biological components in the formation of distinctive ecosystems. Prerequisites: permission of the instructor. Three lectures and one laboratory period.

Four credits hours.

1st sem. 1969-70

BIOLOGY 116.

The Biology of Interspecific Interactions.

Excluding predation, this course will cover the physiology, behavior and ecology of symbiotic, mutualistic and parasitic associations. The lecture series will consider examples from both the plant and animal worlds and also plant-animal interactions of interest. The laboratory will consider both field and laboratory aspects of the structural and functional basis of the more common association; the latter portion of the semester to be devoted to individual research projects of an original character. Prerequisites: General Biology and the permission of the instructor. Three lectures and one optional laboratory period.

Three or Four credit hours.

2nd sem. 1969-70

BIOLOGY 201, 202.

Undergraduate Research.

This course involves an original and individual experimental investigation with associated literature study in one of the fields of biology under the supervision of a member of the staff.

Eight credit hours.

BIOLOGY 203.

Modes of Speciation.

A detailed analysis of the various ways in which species and multi-species systems originate. Prerequisite: Biology 46 or 59 and permission of the instructor. Seminar: one meeting a week.

Three credit hours.

(Not offered 1969-70)

DEPARTMENT OF

Chemistry

Professors: Fiekers, Martus (*Chairman*), Van Hook

Associate Professors: McMaster, Ricci

Assistant Professors: Andruchow, McGrath, Vidulich

Research Associate: Bishop

The curriculum of the Department of Chemistry is designed to provide students with a sound training in the fundamental principles and basic techniques of the science rather than deal with specialized branches of the subject. Accordingly, a student who wishes to major in chemistry is advised to choose in his freshman year the course in General Principles, Chemistry 11, 12. He is advised also to elect in his freshman year Mathematics 31, 32. To continue in the chemistry curriculum the student must obtain an average of 2.0 (C) in Chemistry 11, 12. Further requirements for the student who wishes to qualify for the Bachelor of Arts in Chemistry include Chemistry 21, 22, 54, 55, 56, 101. He is required also to elect Mathematics 41, 42, Physics 11, 12 and two or four semester courses in German.

The curriculum of the Department of Chemistry has been approved by the Committee on Professional Training of the American Chemical Society. Those who desire A.C.S. certification are required to elect in their senior year Chemistry 105 and three other advanced courses in chemistry, mathematics, or physics, as outlined below. The normal offering in the Chemistry Department includes Chemistry 102, 103, 104. By arrangement with the chairmen of the departments involved a student may elect an upper division course in physics and/or mathematics and with the permission of the chairman qualified students will be permitted to elect courses in the Graduate Division.

A student majoring in chemistry who wishes to fulfill premedical or predental requirements is required to take seven semester courses in chemistry along with the required courses in mathematics, physics, and German. In his junior year he may substitute a biology course for Chemistry 101.

A student, not majoring in chemistry, who wishes to fulfill premedical and predental requirements or who plans on majoring in biology, can begin his chemistry requirements by electing Chemistry 11, 12 in his freshman year. As above noted, the grade of C in this course is the minimum acceptable grade for continuing in the chemistry curriculum. For the present, the course in organic chemistry, Chemistry 23, 24, completes the chemistry requirements for biology majors, premedical and predental students.

CHEMISTRY 11.

General Principles of Chemistry I and Qualitative Analysis.

A study is made of the fundamental theories and general laws of chemistry. Subatomic and molecular structure of matter is emphasized, leading to a consideration of the various types and geometry of chemical bonds. The periodic table of the elements is introduced with sufficient descriptive chemistry to illustrate theory. Chemical calculations constitute a large part of the course. The laboratory work consists mainly of semimicro qualitative analysis, stressing equilibrium principles and the solution chemistry of some of the metals.

As a prerequisite it is strongly recommended that the student have had high school courses in both chemistry and physics.

Students majoring in biology, chemistry or seeking to fulfill medical and dental school requirements must complete this course with an average of C or better, prior to admission to courses in organic chemistry. Three lectures and one (three-hour) laboratory per week.

Four credit hours.

CHEMISTRY 12.

General Principles of Chemistry II and Quantitative Analysis.

This course is a continuation of Chemistry 11. It carries ionic equilibria and oxidation-reduction reactions. Introductory concepts of thermochemistry and the energies involved in chemical reactions are also introduced. Again chemical calculations are strongly stressed.

The laboratory exercises are designed to give the student a working knowledge of volumetric and gravimetric analytical techniques, and include acid-base, oxidation-reduction titrations and selected gravimetric experiments.

Chemistry 11, 12 is a prerequisite for all continuing courses in chemistry. It is required for majors in chemistry and biology and other majors who wish to fulfill premedical and predental requirements.

Students majoring in biology, chemistry or seeking to fulfill medical and dental school requirements must complete this course with an average of C or better prior to admission to courses in organic chemistry. Three lectures and one (three-hour) laboratory period per week.

Four credit hours.

CHEMISTRY 21.

Organic Chemistry I.

This course is a study of organic compounds from two points of view: the chemistry of the functional groups and modern structural theory and reaction mechanisms. The laboratory exercises introduce the student to experimental techniques and a study of the chemistry of the functional groups. Three lectures and three hours of laboratory per week. Prerequisite: C average or better in Chemistry 12.

Four credit hours.

CHEMISTRY 22.

Organic Chemistry II.

This course is a continuation of Organic Chemistry I. The laboratory work in this course will further include exercises in organic qualitative analysis. Three lectures and five hours of laboratory per week.

Five credit hours.

CHEMISTRY 23.

Organic Chemistry I.

This course is essentially the same as Chemistry 21. Required for biology majors who wish to fulfill premedical and predental requirements. Three lectures and one (three-hour) laboratory period per week. Prerequisite: C average or better in Chemistry 11, 12.

Four credit hours.

CHEMISTRY 24.

Organic Chemistry II.

This course is essentially the same as Chemistry 22, but for a shorter laboratory period. The systematic identification of organic compounds is not included in the laboratory exercises. Required of biology majors and other majors who wish to fulfill premedical and predental requirements. Three lectures and one (three-hour) laboratory period per week.

Four credit hours.

CHEMISTRY 41, 42.

General Chemistry.

This course is designed for students who are non-science majors, and it is intended to give them an insight into the material make-up of the world around them. Theories concerning the structure of matter and the interaction of matter are introduced. Descriptive matter for the course is chosen from economic substances, such as sulfuric acid, petroleum, coal, tar, rubber, plastics, foods, vitamins, hormones, proteins and the useful metals. Demonstrations illustrate the application of the scientific method. Three lecture hours per week.

Six credit hours.

CHEMISTRY 43, 44.

Special Topics in Chemistry.

This course is devoted to those aspects of chemistry which impinge upon daily living. For those students only who have had a course in high school chemistry and who must fulfill the natural science requirements. Three lectures per week.

Six credits hour.

CHEMISTRY 54.

Instrumentation.

This is a course in instrumental analysis treating the theory and practice of instrumental methods in quantitative analysis. The methods include spectrophotometry, chromatography, polarography and electro-analytic techniques. Organic as well as inorganic compounds comprise the material under study. Three lectures and one (three hour) laboratory period per week.

Four credit hours.

CHEMISTRY 55.

Physical Chemistry I.

A study is made of the fundamental principles and methods by which the behavior of matter in its various states and forms is interpreted. Molecular constitution, thermochemistry, thermodynamics and the quantitative laws of solution are considered. A course in differential and integral calculus is a prerequisite. Laboratory training in this and the following course is designed to test the more important physico-chemical laws, to inculcate physico-chemical techniques, and to develop the habit of quantitative interpretation of such phenomena. Three lectures and five hours of laboratory period per week.

Five credit hours.

CHEMISTRY 56.

Physical Chemistry II.

This is a continuation of Physical Chemistry I and includes such topics as homogeneous and heterogeneous equilibria, reaction kinetics, electric conductance and electro-chemistry. Three lectures and five hours of laboratory per week.

Five credit hours.

CHEMISTRY 60.

Special Topics in Organic Chemistry.

This course is offered to senior premedical and pre dental students and is an extension of the Introductory Organic Chemistry course. It will deal mainly with the chemistry of natural products, carbohydrates, fats, proteins, and other compounds of biochemical interest. Three lectures per week. *Three credits hours.*

CHEMISTRY 62.

Special Topics in Physical Chemistry.

This course, offered to senior premedical and pre dental students only, will deal with the principles of thermodynamics and kinetics as applied to chemical reactions. Attention will be paid to reactions of biochemical interest. Preferably, the student should have an introductory knowledge of calculus. Three lectures per week. *Three credit hours.*

CHEMISTRY 101.

Synthetic Organic Chemistry.

This course will provide students of advanced organic chemistry with the scope, limitation and stereochemical consequences of a selected group of organic reactions. The laboratory exercises will be devoted to the more advanced type of synthetic procedures, which are ordinarily beyond the scope of the introductory course. Two lectures and one (three-hour) laboratory period per week. *Three credit hours.*

CHEMISTRY 102.

Advanced Organic Chemistry.

The course deals with the application of physical methods to the study of organic compounds. Topics include structure and bonding, dipole moments and conformational analysis, acidity and basicity, methods of determining reaction mechanisms, structure-reactivity correlation and transition state theory. Three lectures per week. *Three credit hours.*

CHEMISTRY 103.

Advanced Physical Chemistry.

This course is designed to acquaint the student with quantum chemistry. The Schrödinger approach is used to calculate energy levels for simple systems and the method is applied to the hydrogen atom, simple molecules, and atomic molecular spectra. The molecular orbital and valence bond methods of bonding are also discussed. Three lectures per week. *Three credit hours.*

CHEMISTRY 104.

Undergraduate Investigation in Chemistry.

This involves an original and individual experimental investigation with associated literature study in one of the fields of chemistry under the supervision of a member of the staff. Once a week the senior chemistry majors meet with the staff and graduate students in seminar. The student may begin his undergraduate investigation in his sophomore year. *Three credit hours.*

CHEMISTRY 105.

Inorganic Chemistry.

This is a course in structural chemistry which comprises a survey of bonding theories from Couper (1858) to Linnett and Luder (1967). The theories of Pauling, an account of over thirty years of literature, and the periodic table are emphasized. Much time is given to the theory of Gillespie and the ligand field theory. Laboratory assignments are in synthesis. Laboratory deals with electrolytic methods, dry methods and coordination compounds. Three lectures and one (three-hour) laboratory period per week. *Four credit hours.*

GRADUATE DEPARTMENT OF

Chemistry

Professors: Fiekers, Martus (Director), Van Hook

Associate Professors: McMaster, Ricci

Assistant Professors: Andruchow, McGrath, Vidulich

Research Associate: Bishop

The College conducts courses in chemistry for graduate students, leading to the Master of Science degree. Candidates must hold a baccalaureate degree from an accredited collegiate institution. An overall minimum quality point average of 2.5 is required ($A=4.00$). Candidates for admission should file applications with the Director before the fifteenth of March each year. In support of application each candidate should forward a transcript of his undergraduate record. Furthermore, the applicant should provide that letters of recommendation be supplied by two former college chemistry professors. In the case of successful applicants, a supplemental completed transcript with record of degree received, should be sent after graduation.

Thirty course hours, of which ten are in research, are required for the degree. Students without the minimum number of undergraduate courses will have an opportunity to make them up. The residency is generally from three to four semesters.

CHEMISTRY 201.

Advanced Inorganic Chemistry.

This course is designed to give the student an advanced presentation of the modern concepts of bonding in inorganic chemistry both from an experimental and theoretical viewpoint. An introduction to quantum mechanics is given, followed by the valence-bond and the more current molecular orbital approach to bonding with emphasis on the symmetry properties of the compounds. The crystal field and ligand field approach to reaction rates and mechanisms of transition metal complexes in aqueous solution are also covered in this course.

This course will consist of three formal lectures and a fourth period devoted to an informal seminar in which current literature topics will be discussed.

Four credit hours.

CHEMISTRY 203.

Advanced Organic Chemistry.

This course is designed to acquaint the student with quantum chemistry. The Schrodinger approach is used to calculate energy levels for simple systems and the method is applied to the hydrogen atom, simple molecules, and atomic molecular spectra. The molecular orbital and valence bond methods of bonding are also discussed. Three lectures per week.

Three credit hours.

CHEMISTRY 207.

Chemical Thermodynamics.

This course develops the principles of chemical thermodynamics and includes applications. The fundamentals of statistical mechanics are also taught. Laboratory work comprises experiments in advanced physical chemistry with emphasis on thermochemistry. Required of all graduate students. Three lectures per week for one semester. *Four credit hours.*

CHEMISTRY 208.

Reaction Rates.

A study of the kinetics of reactions in both homogeneous and heterogeneous systems, paralleled with experimental applications. Required of all graduate students. Four lectures per week for one semester. *Four credit hours.*

CHEMISTRY 209, 210.

History of Chemistry I and II.

The first semester will include the historical development of fundamental chemical concepts up to and including those of the nineteenth century. The second semester will be devoted to a study of contemporary developments and contemporary chemists. There will be assigned readings. Required for all graduate students. One lecture per week. *Two credit hours.*

CHEMISTRY 212.

Department Seminar.

One hour per week. One credit for each semester. Total credit not to exceed two credit hours.

CHEMISTRY 213.

Graduate Investigation in Chemistry.

This will comprise an original and individual experimental investigation beyond the undergraduate level in one of the fields of chemistry, supervised by a member of the staff. *Ten credit hours.*

CHEMISTRY 214.

The Literature of Chemistry.

The course is designed to awaken the student to the kinds of questions that send a chemist to the library, to acquaint him with the resources of a typical chemical library and to give him experience in locating efficiently specific kinds of desired information. The course is informal with no recorded credit. It is a preparation for the literature search that will be done in connection with the student's experimental investigation.

FACULTY AND AREAS OF RESEARCH

William Andruchow (Ph.D. Tulane 1967)—Physical Inorganic; R.B. Bishop (M.S. Holy Cross 1939)—Research Associate in Petrochemicals and Polymers; B.A. Fickers, S.J. (Ph.D. Clark 1942)—Consultant in Science Education; M.G. McGrath (Ph.D. Massachusetts Institute of Technology 1967)—Organic Syntheses; P.D. McMaster (Ph.D. Clark 1961)—Biochemistry, Stereochemistry; R.W. Ricci (Ph.D. New Hampshire 1961)—Photochemistry; A. VanHook (Ph.D. New York University 1934)—Crystal Growth; G.A. Vidulich (Ph.D. Brown 1964)—Physical Chemistry of Solutions.

EQUIPMENT FACILITIES

Major items of equipment to support the varied research activities include: Nuclear Magnetic Resonance Spectrometer, Recording Infra Red and UV-VIS Spectrophotometers, Vapor Phase Chromatographs, DU Spectrophotometer, UV Flow Analyzer and Fraction Collector. Each professor has his own individual research laboratory, containing special equipment for his own and directed research. The Data Processing Center has an IBM 360-30 Computer available for students.

ASSISTANTSHIPS

Teaching assistantships are available carrying a stipend up to \$2,400 for ten months. Fellows will devote not more than nine hours per week as laboratory instructors.

FOR FURTHER INFORMATION

Write to:

DIRECTOR, GRADUATE DIVISION
DEPARTMENT OF CHEMISTRY
COLLEGE OF THE HOLY CROSS
WORCESTER, MASSACHUSETTS 01610

DEPARTMENT OF

The Classics

Professors: Marique, Sampey

Associate Professors: Buckley, Carroll, Donaldson, FitzGerald, Healey, Lavery

Assistant Professors: Banks (Chairman), Happe, Loewy, Ziobro

The curriculum of the Classics Department is formed around two principles. First, the liberal arts college student should be given the opportunity to study the Greek and Roman sources of Western Culture. Thus, courses on the introductory, intermediate and advanced level in Greek and Latin are available to all students, as well as courses in Greek and Roman history, politics and literature given in English. Secondly, the student who intends to make the study of classics his career is provided with a wide selection of courses, seminars, and tutorials over his four years to give him an extensive background preparation in Greek and Latin authors for his graduate school study.

Therefore, any student entering freshman year whether he is to be a classics major or not, may enroll in a Greek and/or Latin course introductory, intermediate or advanced according to his background. The ordinary program for a freshman is one of the following:

- 2 semester courses in Latin or 2 in Greek, or
- 1 semester course in Latin and 1 in Greek, or
- 2 semester courses in Latin and 2 in Greek.

The Director of Admissions and the Faculty Advisor are to be consulted especially in the case where a student takes one full year of Greek and of Latin, since the freshman history requirement would then be postponed until sophomore or junior year.

The requirement for a major in classics varies from eight semester courses to fourteen depending on whether the student intends to make classical studies his career or not.

LATIN

LATIN 11, 12.

Introduction to Latin.

A grammar course introducing the student to the Latin language and Latin literature.

Six credit hours.

LATIN 13, 14.

Intermediate Latin.

For those who have had one or two years of Latin in the pre-college period.

Six credit hours.

LATIN 115, 116.

Advanced Latin.

A survey of Classical Latin Literature from its early remains to Macrobius.

Six credit hours.

LATIN 121.

Roman Historians: Tacitus.

A study of the writings of Roman Historians with selections from Livy and Tacitus read in the original.

Three credit hours.

(Not offered 1969-70)

LATIN 122.

Roman Oratory.

Selected orations of Cicero in the original studied and analyzed rhetorically.

Three credit hours.

(Not offered 1969-70)

LATIN 124.

Roman Satire.

The meaning and form of Roman satire as observed in the selected works of Horace and Juvenal.

Three credit hours.

LATIN 142.

Roman Political Ideas.

A study of the concept of the *res publica* and its historical transformation under the influences of religion, philosophy, political machination, the expansion of Roman power, and certain qualities inherent in the Roman character. No Latin is required.

Three credit hours.

LATIN 147.

Lucretius.

An intensive examination of the poetic and philosophic message of Lucretius' Epicurean gospel, the *De rerum natura*.

Three credit hours.

LATIN 153, 154.

Medieval Latin Literature I and II.

First semester: Latin literature of the first 800 years of the Christian era.

Second semester: A reading and criticism of the secular and religious Latin literature from the 8th century on.

Six credit hours.

LATIN 155.

Renaissance Latin.

This course which concentrates on the Latin documents and literature of the Renaissance periods is conceived as a continuation of Medieval Latin I and II.

Three credit hours.

(Not offered 1969-70)

LATIN 159.

Vergil: Eclogues and Georgics.

The development of pastoral and agricultural poetry in Rome as exemplified in Vergil's two poetic masterpieces.

Three credit hours.

(Not offered 1969-70)

LATIN 163.

Roman Comedy.

Selected plays of Plautus and Terence read in Latin combined with a study of Roman Comedy and its influence on later literature.

Three credit hours.

(Not offered 1969-70)

LATIN 166.

Ovid.

Selections from the elegiac verse of Ovid; a survey of the principal themes of the genre; the specific contributions that the poet made to the tradition; the continuation of the tradition in the love poetry of the Middle Ages. *Three credit hours.*

LATIN 170.

History of Rome.

The growth and downfall of the Roman Republic; the establishment of the principate; imperial government to the time of Diocletian; social and economic developments; foreign policy; sources for our reconstruction of Roman History.

No Latin is required.

Three credit hours.

(Not offered 1969-70)

LATIN 190.

Roman Religion.

Selected texts from Ovid, Cicero and Apuleius analyzed for an understanding of the religious forces present in ancient Rome.

Three credit hours.

(Not offered 1969-70)

LATIN 201, 202.

Tutorial-Seminar.

Designed for selected students with approval of professor and chairman. Such areas as Roman Poets, Seneca, Survey of Latin Literature, and Latin Literary Criticism are available.

Six credit hours.

GREEK

GREEK 11, 12.

Introduction to Greek.

An intensive one-year introduction to the literature of ancient Greece in the original language. The course is a linguistic and literary study of the historical growth of the Greek language, beginning with *The Iliad* of Homer. Enrollment is limited to serious students with superior talents in the areas of language and literature.

Six credit hours.

GREEK 13, 14.

Intermediate Greek.

First semester: Readings and textual student of the works of Lysias.

Second semester: Readings from the early Elegiac Poetry of Greece. (Offered mainly for students who have completed Greek 11, 12.)

Six credit hours.

GREEK 125, 126.

Advanced Greek.

First semester: Reading and study of Plato's *Apology* in the original.

Second semester: Lyric Poetry: a survey of the rise and development of elegiac, iambic and melic forms among the Greeks.

Six credit hours.

GREEK 127, 128.

Early Christian and Greek Literature.

First semester: Selected texts from the New Testament read and analyzed.

Second semester: Selected readings from early Greek Patristics read and analyzed.

Six credit hours.

GREEK 141.

Ancient Political Philosophy.

A study of the ancient literature concerning the state and its forms. The evolution of political thought from its beginnings in early Greek poetry through Plato and Aristotle to Polybius will be considered in relation to the historical development of actual political institutions. *Three credit hours.*

GREEK 142.

Greek Ethics.

A survey of the religious, social and philosophical foundations underlining ancient Greek conduct. *Three credit hours.*

GREEK 147, 148.

Greek Epic: Homer's Iliad.

A reading of selected books of the *Iliad* with focus on the history of the text, the Epic hero, and oral tradition.

Second semester: Homeric poems and Hesiod. *Six credit hours.*

GREEK 156.

Euripides.

An analysis of three plays in Greek, with special attention on the dramatic technique and "modern" views of Euripides. *Three credit hours.*

GREEK 157.

History of Greece.

A study of Greek history from the creation of Cretan civilization to the death of Alexander. The course will include some study of original documents. No Greek is required. *Three credit hours.*

(Not offered 1969-70)

GREEK 173.

Sophocles.

An analysis of three of the plays in Greek, with special attention on the tragic art of Sophocles as revealed through his study of philosophic man. *Three credit hours.*

GREEK 186.

Aristophanes.

Selected plays will be read in the original. Historical backgrounds, literary interpretation and study of the genre; comedy emphasized. *Three credit hours.*

GREEK 189.

Greek Choral Poetry.

The evolution of poetry between the Epic and Attic tragedy, culminating in the study of Bacchylides and Pindar. Some attention will be given to metrical developments between the Seventh and Fifth centuries. *Three credit hours.*

GREEK 190.

Development of Greek Literature in Prose.

The stages leading to the conflicting claims for cultural and political supremacy between the schools of Isocrates and Plato are taken up by a study of the Sophists, the development of Greek rhetoric and selected dialogues of Plato.

Three credit hours.
(Not offered 1969-70)

GREEK 201, 202.

Greek Hellenic Tradition Seminar—Herodotus.

The text of the nine books of the Histories; a study of the art form of the work; the antecedents of historical writing; Herodotus as a scientific writer; Greek History from the Persian wars to 431 B.C.; the contemporaries of Herodotus; his influence on later literatures.

Six credit hours.

(Not offered 1969-70)

GREEK 203, 204.

Greek Pastoral Poetry.

A study of Theocritus, Bion and Moschus and their influence on later pastoral and Christian literature.

Six credit hours.

(Not offered 1969-70)

GREEK 205, 206.

Greek Hellenic Tradition Seminar—Aeschylus.

The text of the seven plays of Aeschylus; a critical analysis of the thought and form of each tragedy; a study of the historical background of the plays together with the origin and development of Classical Greek Drama.

Six credit hours.

(Not offered 1969-70)

GREEK 207, 208.

Thucydides (Hellenic Tradition Seminar).

All eight books are to be covered completely and the students are responsible for translation and explanation of the text; historical and critical background; the influence of Thucydides and his qualities as a historian.

Six credit hours.

GREEK 251, 252.

Tutorial Seminar.

Designed for selected students with approval of professor and chairman. Such areas as Aeschylus, Demosthenes, Pindar, etc., are available.

Six credit hours.

CLASSICS

CLASSICS 127, 128.

Classics in English.

The objective of this course is the attainment of a reasonable understanding and appraisal of Classical literature through the application of Classical theories of literary art to the major works of the major Greek and Roman authors.

The first semester deals with Greek authors.

The second semester deals with Roman authors.

Six credit hours.

CLASSICS 141.

Drama of Classical Greece.

A critical study, in English translation, of Aeschylus, Sophocles, Euripides and Aristophanes; supplementary study of the context—religious, philosophical, social and political—in which the plays were written and produced.

Three credit hours.

CLASSICS 190, 191.

Greek and Roman Religion.

A study of Greek and Roman religious rites and practices both public and private. First Semester: from pre-Homeric to Alexandrian period.

Second Semester: from pre-Roman Republic to Hadrian's reign.

Six credit hours.

HEBREW

HEBREW 11, 12.

Introduction to Hebrew.

A study of the Hebrew grammar.

Six credit hours.

HEBREW 13, 14.

Intermediate Hebrew.

An intermediate course for students who have already had a year of grammar with concentration on advanced grammar and readings from the Old Testament.

Six credit hours.

ARABIC

ARABIC 11, 12.

Introduction to Arabic.

A study of Classical Arabic grammar.

ARABIC 13, 14.

Intermediate Arabic.

An intermediate course for students who have already had a year of grammar.

Six credit hours.

ARABIC 25, 26.

Advanced Arabic.

For students who have had 2 or more years of Arabic.

Six credit hours.

DEPARTMENT OF

Economics

Professors: R. F. X. Cahill, B. W. McCarthy, Peragallo

Associate Professors: T. J. Cahill, Judge, Petrella (Chairman), R. J. Smith

Assistant Professors: Bender, Fahey, J. D. O'Connell, Strobel

Instructors: Ellingson, J.F. O'Connell, Nordstrom

The curriculum of the department has been conceived with the one major objective of providing the student with as broad and well balanced an education as possible. Specialization is kept to a minimum. Course content is basically theoretical and aimed at developing the student's analytical and critical faculties, at stimulating his powers of interpretation, synthesis and understanding, and at training him to exact thinking. The emphasis is on the understanding of our economic system and on the analysis of its economic and business problems. The student is thus prepared to continue his education at the graduate level or to enter effectively into the business world. The curriculum is broadly integrated and in accordance with the liberal arts tradition.

The Economics Major

The minimum requirement for a major in economics is twelve (12) semester courses in economics including the Principles course.

<i>Freshman</i>	Mathematics*	2
<i>Sophomore</i>	Principles of Economics***	2
<i>Junior</i>	Micro/Macro Economics	2
	Statistics	1
	Economics Electives**	2
<i>Senior</i>	Economics Electives**	5

Premed Economics Major

<i>Freshman</i>	Mathematics*	2
<i>Sophomore</i>	Principles of Economics***	2
<i>Junior</i>	Micro/Macro Economics	2
<i>Senior</i>	Statistics	1
	Economics Electives**	5

* Although not counted in the "minimum major" requirement, Mathematics 21, 22 are required for the economics major. Moreover, the department views additional electives in mathematics and computer science as desirable for the economics major.

** Economics majors may take up to nine (9) hours in accounting as economics electives. Accounting electives are restricted to the following courses: Economics 43, 44, and 147.

*** The economics major, e.g. with advanced placement in English, mathematics, etc., may, if he wishes, take the Principles course in freshman year.

*The Accounting Major**

The minimum requirement for a major in economics-accounting is ten (10) semester courses in accounting and law and nine (9) semester courses in economics.

<i>Freshman</i>	Financial and Administrative Accounting	2
<i>Sophomore</i>	Asset and Equity Accounting	2
	Principles of Economics	2
	Economic History of the U.S.	1
	Modern Language or Mathematics**	2
<i>Junior</i>	Cost and Advanced Accounting	2
	Economics Elective	1
	Money & Banking	1
	Statistics	1
	Corporate Finance	1
<i>Senior</i>	Federal Income Taxation	1
	Business Law	2
	Auditing	1
	Economics Elective	2

* With special permission of the accounting faculty, students who begin accounting in their sophomore year may take Economics 131, 132 and 161, 167 simultaneously in their junior year.

** If a second year of modern language is required, two semester courses of Mathematics (21, 22) must be taken in junior or senior year.

Non-Majors

Non-majors who have had Economics 11, 12 are able to elect most of the standard offerings within the department. Economics 121, 43, 44 and 147 do not require the Economics 11, 12 prerequisite. Economics 43, 44 and 147 are the only accounting courses open to non-majors.

Academic credit for the first semester of the following courses ordinarily *will not be given* unless the second semester is also completed: Economics 15 (16), 43 (44).

Freshman-Sophomore Seminar

The department offers a Freshman-Sophomore Economics Seminar every year. Application for this Honors seminar is made through the Office of Special Studies. Sophomore Honors students in the department are required to take this seminar in lieu of Economics 11, 12.

Advanced Placement in Economics

To any student from New York State achieving at least a C on the New York State College Proficiency examination in economics, the department offers credit and advanced placement. Students seeking credit should inquire in writing to the Chairman of the Department.

ECONOMICS 11, 12.

Principles of Economics.

A study of the basic institutions and principles underlying the operation of the economic system. In first semester, particular attention is given to national income analysis, fiscal policy and the business cycle, money, banking and monetary policy, economic growth and development and international trade. In second semester, emphasis is on the determination of commodity and resource prices under different market conditions, the distribution of income, unions and collective bargaining, and the regulation of industry.

Six credit hours.

ECONOMICS 15, 16.

Financial and Administrative Accounting.

A study of the fundamental principles of accounting for proprietorships, partnerships, and corporations, and of the basic theory underlying these principles. The course also considers the managerial uses of accounting data in such areas as credit and investment decisions, choice of financing, expansion or contraction of operations, and establishment of dividend policy.

Six credit hours.

ECONOMICS 217, 218 (formerly 17, 18).

Freshman-Sophomore Economics Seminar.

This program involves an accelerated, analytical development of the principles of economics in addition to student participation and discussion on selected works in the area of history of economic ideas and institutions.

Six credit hours.

ECONOMICS 121 (formerly 21).

Economic History of the United States.

A critical study of the development of the American economy from Colonial days to the present, focusing attention on such areas as agriculture, labor and industry, population and immigration, banking and finance, foreign and domestic commerce, transportation and communication, and the changing role of the government in economic life. Lectures, outside readings, book reviews. *Three credit hours.*

ECONOMICS 223 (formerly 23).

Seminar in U.S. Economic History.

Emphasis is placed upon the reading and discussion, in their historical context, of books and articles pertaining to controversial questions in American economic history, such as the tariff, land policy, antitrust policy, and fiscal and monetary policy. Prerequisite: Economics 11, 12.

Permission of Instructor

Three credit hours.

(Not offered 1969-70)

ECONOMICS 125 (formerly 25).

Micro-Economic Theory.

This course is concerned with the development of micro-economic topics at the intermediate level of analysis. Major areas of concentration are the analysis of demand and production theory using both classical and modern analytical tools, the study of market structures, pure competition, monopolistic competition, oligopoly and monopoly, and the analysis of resource pricing and allocation in different market situations. Prerequisite: Economics 11, 12.

Three credit hours.

ECONOMICS 126 (formerly 26).

Macro-Economic Theory.

This course studies the behavior of aggregate economic phenomena in the economic system. Topic areas considered are the measurement of economic activity, the theory of income determination and the level of employment, monetary theory, general equilibrium analysis of the income and monetary sectors, and growth theory. Applications of the theory are made to problems involved in monetary and fiscal policy, international monetary policy and inflation, employment and growth policies. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 131, 132 (formerly 31, 32).

Asset and Equity Accounting.

This course is designed to serve the needs of the accounting major. Emphasis is placed on the basic assumptions that underlie modern accounting, the principles, procedures, and methods that are applied in the preparation of financial statements and the proper uses that can be made of financial data. With this background the student is prepared to analyze and interpret the full product of accounting. Special emphasis is placed on the Accounting Research Studies as well as the opinions of the Principles Board of the American Institute of Certified Public Accountants. Reference is also made to the latest income tax laws and other legislation affecting accounting practice. Prerequisite: Economics 15, 16. *Six credit hours.*

ECONOMICS 43, 44.

Financial and Administrative Accounting.

Same as Economics 15, 16.

Six credit hours.

ECONOMICS 145, 146 (formerly 45, 46).

Business Law (Based on the Commercial Code).

Required of all students majoring in accounting. The course includes contracts, agency, sales, negotiable instruments, the legal aspect of business associations, insurance, and property, both real and personal. The course is intended to correlate the accounting and legal aspects in reference to common business transactions. It is also intended to aid in the understanding of the social significance of law and the part it has played in the development of our economic life. Prerequisite: Economics 131, 132. *Six credit hours.*

ECONOMICS 147 (formerly 47).

Accounting for Managerial Decisions.

This course stresses the use of accounting as a tool for managerial control. The course considers such subjects as budgeting and the setting of standards, accounting systems and internal control, product costing and cost analysis, and the administration of standard costs and budgetary systems of control. Relevant subject matter on cost accounting, production management and activity analysis or "linear programming" is also included. Prerequisite: Economics 43, 44. *Three credit hours.*

ECONOMICS 151 (formerly 51).

Corporation Finance.

After first considering the nature of the corporation and contrasting the corporation with other forms of business organization, this course then treats alternative methods of financing both long-term and short-term requirements for funds, characteristic financial policies and structures of important industry groups, functions of securities exchanges, and the role of the promoter and investment banker in business finance. Attention is also given to the preparation of cash budgets and the analysis of financial statements. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 152 (formerly 52).

Statistics.

This course treats descriptive statistics; the binomial, normal, Student's, and chi-square distributions; principles of sampling, hypothesis testing, and parameter estimation; regression, correlation, and the analysis of time series. Applications will be drawn from business, economics, and accounting. *Three credit hours.*

ECONOMICS 153 (formerly 53).

Money and Banking.

The purpose of this course is to introduce the student to the economic principles governing modern monetary arrangements, credit and banking in the economic system. Special emphasis is placed upon an understanding and evaluation of the control mechanisms in the central banking system and the integration of modern income and monetary theory. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 154 (formerly 54).

Advanced Statistics.

This course includes study of the probability basis of statistical distributions; properties of important distributions; the general decision model; topics in statistical inference including Bayseian statistics and analysis of variance. Prerequisite: Economics 152. *Three credit hours.*

ECONOMICS 155 (formerly 55).

Managerial Economics.

Topics included in this course are Decision Making, Forecasting, Demand and Supply, Management of the Product Variable, Price as a Tactical Weapon, Economic Bases of Logistics Analysis, Risk Management, Commodity Markets and Linear Programming Techniques. Prerequisites: Economics 125, 126. *Three credit hours.*

ECONOMICS 156 (formerly 56).

Economic Research and Operations Analysis.

This course is designed to acquaint the student with the application of mathematical and statistical techniques to economic and business problems. It involves construction and analysis of probabilistic and multi-variate behavioral models, optimization, statistical decision theory under certainty and uncertainty, game theory, and linear programming. Prerequisite: Economics 11, 12, 152. *Three credit hours.*

ECONOMICS 158 (formerly 58).

Public Finance.

This course seeks to discern and appraise the effects of government financial policies. Basic principles and issues of government budgeting, spending, and revenue raising are investigated. Attention is also given to the problems of the public debt, fiscal policy and intergovernmental fiscal relations. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 259 (formerly 59).

Problems in Public Finance and Fiscal Policy.

This course explores in depth the principles of analysis developed in Economics 58. Content of the course will include elements of advanced theory and intensive reading and student research into specific problem areas. Students will be free to pursue research within the field in line with their interests. Prerequisite: Economics 158. (Permission of Instructor) *Three credit hours.*

ECONOMICS 161 (formerly 61).

Cost Accounting.

An introductory study of basic cost accounting principles, practices, and procedures, with a special emphasis on job order costs, process costs, standard cost, and estimated costs; managerial control through the use of cost accounting data and procedures; and special applications of cost accounting procedures. Prerequisite: Economics 131, 132. *Three credit hours.*

ECONOMICS 163 (formerly 63).

Auditing.

A study of the theory and practice of auditing and an examination of professional ethics. The laboratory work covers audit problems and a test audit of a small manufacturing concern. Prerequisite: Economics 161. *Three credit hours.*

ECONOMICS 165 (formerly 65).

Federal Income Taxation.

A study of the federal income tax laws as they affect individuals, partnerships, and corporations. Consideration is also given to the history of the federal income tax statutes and the methods of enacting tax legislation. Prerequisite: Economics 131, 132. *Three credit hours.*

ECONOMICS 266 (formerly 66).

Federal Tax Policy Seminar.

An inquiry into proposed reforms of the existing federal tax structure of the United States, emphasizing reform of the federal income tax upon individuals and corporations, and also considering changes in the taxation of gifts, trusts, and estates. Present tax law and suggested revisions will be reviewed in the light of the various objectives of tax policy such as increased fairness, reduced complexity, minimum restraint upon economic growth, and promotion of greater economic stability. Consideration will also be given to the use of tax policy to achieve various social and political objectives. Prerequisite: Economics 165. *Three credit hours.*

ECONOMICS 167 (formerly 67).

Advanced Accounting.

Parent and subsidiary accounting relationships are studied and a critical analysis is made of the principles and postulates of accounting based upon the study of the Accounting Research Bulletins of the American Institute of Accountants and the Accounting Releases of the Securities and Exchange Commission. Research topics are assigned and reported upon. The course is organized on a group discussion basis. Prerequisite: Economics 161. *Three credit hours.*

ECONOMICS 171 (formerly 71).

Early Economic Theories.

This course studies the development of economic analysis from the Greek and Roman period up through 1870. Major concentration is on Mercantilist monetary theory and policy, value and distribution theories of the Classical economists, the rise and development of Economic Liberalism and Karl Marx. Prerequisite: Economics 11, 12. *Three credit hours.*

(Not offered 1969-70)

ECONOMICS 172 (formerly 72).

Modern Economic Theories.

This course studies the development of economic analysis from 1870 up to the present. Topics considered are, the Marginalist and Historical schools, Alfred Marshall and neo-classical economics, Mathematical economics, Economic Liberalism in the twentieth century, American Institutionalism, Imperfect Competition theories, and the development of Welfare Economics. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 173 (formerly 73).

Comparative Economic Systems.

The focus of this course is on the economic principles and issues involved with finding alternatives to the market economy. Capitalism is critically reviewed and evaluated, an historical sketch of the search for alternative economic systems is made, and three alternative models for Capitalism are examined: i.e., Authoritarian Capitalism, Authoritarian and Liberal Socialism. Finally, the Russian, British and Fascist German economies are presented as examples of economic systems in action. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 175 (formerly 75).

Industrial Organization and Public Policy.

This course presents an investigation of the basis of government-business relationships together with an historical development of control. It includes special problems of control relative to trusts, public utilities, transportation, extractive industries, exchanges and labor. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 277 (formerly 77).

Directed Readings in Economics.

A program in reading and research open to qualified Economics majors.

Three credit hours.

ECONOMICS 178 (formerly 78).

International Economics.

This course is primarily a study of the theory of international trade. It is concerned with the theoretical basis for international trade, the determination of the terms of trade among nations, the price and income adjustment processes in a nation's balance of payments and the effect of restrictions such as tariffs and import quotas upon a trade situation. Prerequisite: Economics 11, 12. *Three credit hours.*

(Not offered 1969-70)

ECONOMICS 279 (formerly 79).

International Economic Problems.

This course will concentrate on selected problems in International Economics, e.g. the international monetary system: problems and policies; international trade and economic development; the theory of customs unions; and, special topics in the theory of International economics. Prerequisite: Economics 178 and permission of instructor. *Three credit hours.*

(Not offered 1969-70)

ECONOMICS 181 (formerly 81).

Economic Growth and Development.

This course examines the theoretical and institutional factors influencing economic growth. Attention is given to various models of economic growth, the relation between social, political and economic institutions and the pattern of economic growth, the optimal public policy mix for economic growth and special problems of growth faced by the underdeveloped nations. Prerequisite: Economics 11, 12. *Three credit hours.*

ECONOMICS 183 (formerly 83).

Urban Economics.

This course develops modes of economic analysis appropriate for analyzing the socio-economic problems of the contemporary urban community. The implications of the analysis for economic policy are emphasized throughout. Prerequisites: Economics 11, 12. *Three credit hours.*

ECONOMICS 284 (formerly 84).

Regional Economic Systems.

This course analyzes the concept and dimensions of a regional economic system. Topics covered include regional accounting, industry allocation, regional economic planning, etc. Where possible, applications for public policy are emphasized. Prerequisites: Economics 125, 126. *Three credit hours.*

(Not offered 1969-70)

ECONOMICS 194, 195 (formerly 94, 95).

Industrial Relations.

A critical examination of industrial relations within the context of the American economic system, focusing upon the functions of management, labor and government, as these functions apply to the collective bargaining process. The course is of one year's duration and offers a choice of outside work projects, independent research, apprenticeship programs, extra course work through the facilities of the Institute of Industrial Relations, seminars and some lectures. In addition to the written work, a final oral comprehensive examination is required. Prerequisites: Economics 11, 12. *Six credit hours.*

ECONOMICS 197 (formerly 97).

Mathematical Economics.

This course is an introduction to the use of mathematical analysis as applied to economic theory and practice. It consists of an introduction to mathematical models; a brief survey of elementary set theory; an extensive analysis of simple and complex linear systems (including demand and supply models, equilibrium models for several goods, national income models, imputations, linear programming, Walrasian general equilibrium, and techniques of determinants); an introduction to logarithmic functions and applications; and an examination of differential and integral calculus and its applications to economics. Student preparation of papers treating specified economic topics in a mathematical manner is an essential part of the course. Prerequisite: Economics 125, 126. *Three credit hours.*

ECONOMICS 298 (formerly 98).

Econometrics.

This course introduces the statistical measurement and testing of theoretical economic relationships. It will begin with a review of simple linear regression, correlation and hypothesis testing through multiple regression and parameter estimation in simultaneous economic models. Economic applications are emphasized throughout. Prerequisites: Economics 152, 197. *Three credit hours.*

ECONOMICS 299 (formerly 99).

Senior Seminar.

(Not offered 1969-70)

DEPARTMENT OF

Education

Instructor: Maguire (Acting Chairman)

To meet the needs of those students who wish to become secondary school teachers upon graduation or thereafter, the Department of Education offers a number of courses in education to sophomores, juniors, and seniors. Each student should consult periodically with the Chairman of the Department to plan the development of his course program. The program is, in practice, geared specifically to the requirements for teacher certification on the secondary level in Massachusetts.

EDUCATION 61.

Adolescent Psychology.

This course is a study of behavior arising from the problems proper to that period of transition from childhood to maturity.

Three credit hours.

EDUCATION 62.

Principles of Guidance.

This course introduces the future teacher to the area of guidance in the schools. It gives the student an acquaintance with the various subdivisions of guidance, such as counseling, the use of educational and occupational information, group guidance, and testing. It is also geared to helping the prospective teacher decide whether the area of guidance as a future specialization may be of interest to him.

Three credit hours.

EDUCATION 65.

History of Education in the U.S.

A study of the history of American education, including higher education, from the mid-seventeenth century to the present.

Three credit hours.

(Not offered 1969-70)

EDUCATION 67.

Educational Psychology.

The student is introduced to many of the relationships existing between psychology and education. The topics of growth and development, the nature of the learner, the teaching-learning process, and the role of the teacher in the widest development of the child, are studied. This course is a prerequisite for Education 70 and 72.

Three credit hours.

EDUCATION 75.

Principles and Methods of Secondary School Teaching.

This course stresses the various techniques and methods of teaching appropriate to the secondary school teacher and orients the prospective teacher to a familiarity with the development of teaching manner and curriculum.

Three credit hours.

EDUCATION 76.

Tests and Measurements.

A study of the tests and evaluation devices used by schools and counseling agencies. Administration, interpretation, and theory are discussed.

Three credit hours.

(Not offered 1969-70)

EDUCATION 78.

Curriculum Development.

An introduction to the principles of the secondary school. Curriculum considered historically, theoretically, and practically.

Three credit hours.

(Not offered 1968-69)

EDUCATION 268.

Philosophy of Education.

This course acquaints the student with the thinking of Aristotle, Plato, Aquinas, Kant, Descartes, and Dewey, among others, as their thinking pertains to the concerns of education. The course is a series of explorations of a number of questions pertaining to education.

Three credit hours.

EDUCATION 270.

Student Teaching.

A strictly supervised program, for selected students, of observation and teaching in a secondary school. Education 67 is a required prerequisite, and Education 75 is a strongly recommended prerequisite.

Three credit hours.

EDUCATION 272.

Student Teaching.

A strictly supervised program, for selected students, of observation and teaching in a secondary school. Education 67 is a required prerequisite, and Education 75 is a strongly recommended prerequisite.

Six credit hours.

DEPARTMENT OF

English

Professors: E. F. Callahan (Chairman), McCann, Macris

Associate Professors: Dorenkamp, Healy, Mayer, L. J. McCarthy, Reilly

Assistant Professors: J. Banks, Dailey, Devlin, Lawler, Madden, B. E. McCarthy, Teichgraeber, Wilson

Instructors: R. Burke, J. Carroll, Gagnon, Geracht, Klotz, Skelly

Lecturers: Donaghy, M. E. Herx

The English courses required of all undergraduates in the first year are designed to acquaint the student with the basic forms of literary analysis and the varying critical modes of expression. Extensive reading and critical writing are required.

The English course for majors offers a variety of authors, periods, and forms of literature so that the student may choose a sequence of courses fitted to his development and future needs, whether in graduate school, law, business or some other field. The emphasis in all the courses is on the development of critical judgment grounded in sound understanding of the historical tradition.

ENGLISH MAJORS

The English major is expected to plan his course of studies under the close supervision of his departmental adviser. In the freshman year he will take the two semester introductory course unless he has been granted whole or partial advanced placement by the department. The requirement of two semesters of classics should be undertaken in the freshman year. However, with the chairman's permission this requirement may be postponed until later years as long as it is completed prior to the second semester of his senior year.

The English major is required to elect within his sophomore, junior and senior years a total of ten semesters of upper division courses. (English pre-medical majors are required to elect eight semesters.) Of these ten (eight) elective courses, three (two) may be in American Literature. In no case, will a major have satisfied his departmental requirements until he has completed successfully seven (six) semester courses in English as distinguished from American literature.

In special cases, honors students may undertake more than the elective maximum of courses. Written permission is required of the chairman and the student's adviser for this.

English majors with permission of the chairman and the schools involved may undertake courses at other schools in the Worcester consortium. Courses taken in this cooperative venture count fully toward the completion of the English major.

NON-MAJORS

Since September 1967, the English Department has offered three to four electives per semester exclusively for non-English majors. Although non-majors are free and encouraged to elect within the standard offerings in the department, these courses will be reserved for them, in order that they may have the opportunity of preferential election in certain areas. The courses and teachers so designated will change yearly so that in the upper division years, the non-major will have an opportunity over three years of selecting within a scope of 18 electives.

Broad survey courses (English 160, 161, 180, 181) will be open to non-majors and sophomore English majors only.

FRESHMAN HONORS

In cooperation with the Honors Program, the English department offers each year a two semester elective Honors seminar for the advanced student entering in the freshman class. Each year a different subject, literary approach, or period in English literature is offered as the basis of the seminar. An announcement of the subject is made in the Special Studies bulletin distributed in the summer preceding the student's freshman year. Application for this Honors seminar is effected through the Office of Special Studies.

Acceptance into the program is announced by the seminar teacher after consultation with the English department.

ADVANCED PLACEMENT

The English Department participates in the national and college Advanced Placement Programs. Prior to the student's entrance into the freshman year, the department consults advanced placement scores, high school preparation, and college entrance scores to determine the level of Freshman English which the student will undertake. In certain cases, students with outstanding achievement are allowed to forego the Freshman English requirement and, if they so desire, elect upper division courses (English 100-199).

ENGLISH 10.

Introduction to Prose Forms.

A one semester, introductory course in the problems of prose analysis. The basic forms of the short story and the novel are examined in representative texts. The student is required to submit written analyses demonstrating his ability to utilize various differing critical approaches to literary forms. *Three credit hours.*

ENGLISH 20.

Advanced Literary Analysis.

In this second semester course, the forms of poetry and drama are studied and discussed. The critical norms of the first semester and the written exercises of critical exposition are developed by the close training in textual analysis. *Three credit hours.*

ENGLISH 39.

Freshman Honors Seminar.

A two semester elective Honors Seminar for Freshmen in special problems of literary analysis. First semester: prose; second semester: poetry. *Three credit hours.*

ENGLISH 102.

Anglo-Saxon Literature.

A survey of the writings in England between the 7th and 11th centuries; beginning with the Anglo-Latins, and progressing through the popular, courtly, religious, and heroic traditions in poetry. Emphasis is given to the poetic forms and especially to the heroic work, *Beowulf*. The literature is read in translations, but provision is made for students with a reading knowledge of Anglo-Saxon.

Three credit hours.

ENGLISH 104.

Early English Drama.

A study of the development of the English drama from its continental beginnings to the first regular comedies and tragedies of the early Tudor dramatists.

Three credit hours.

ENGLISH 106.

Middle English Literature.

A study of *Troilus and Criseyde*, *Gawain and the Green Knight*, religious and secular lyrics and other texts of the 13th and 14th centuries.

Three credit hours.

ENGLISH 108.

Chaucer.

A reading and critical discussion of the complete text of the *Canterbury Tales* with subsidiary studies in the minor works.

Three credit hours.

ENGLISH 109.

Special Problems in Early English Literature.

A special course offered periodically for the examination of one form, theme or author in the Medieval period.

Three credit hours.

ENGLISH 110.

Readings in Renaissance Prose, 1513-1642.

A study of prose forms characteristic of the intellectual climate of the English and Continental Renaissance, in particular the history, dialogue, philosophical polemic, and moral and familiar essay. Consideration will also be given to the development of English prose style from More to Bacon.

Three credit hours.

ENGLISH 111.

English Renaissance Poetry of 16th Century.

A survey of the major poets of the century, with a few of the lesser figures. After Skelton's satiric verse, the course concentrates on the lyric and pastoral tradition down to Spenser, Marlowe, Sidney, and Shakespeare.

Three credit hours.

ENGLISH 115.

Tudor Stuart Drama.

The purpose of the course is to treat the important Elizabethan dramatists apart from Shakespeare; from Marlowe to Shirley.

Three credit hours.

ENGLISH 116.

Shakespeare Survey.

A one semester survey of the major works of Shakespeare, examining them as representative of the stages in Shakespeare's dramatic development.

Three credit hours.

ENGLISH 117.

Shakespeare's Elizabethan Drama.

A careful study of Shakespeare's drama prior to 1600. Major attention will be focused upon the Chronological Tetralogies. Corollary studies in the tragedies and comedies will be undertaken also.

Three credit hours.

ENGLISH 119.

Special Problems in 16th Century Literature.

A special course offered periodically for the examination of one form, theme or author in the 16th century.

Three credit hours.

ENGLISH 120.

Shakespeare's Jacobean Drama.

A close analysis of Shakespeare's dramas from *Hamlet* to *The Tempest*. Emphasis will be placed upon stylistic development and Shakespeare's addressing himself to problems of the Jacobean age.

Three credit hours.

ENGLISH 121.

English Poetry, 1600-1660.

A study of the two major traditions of the period, Jonson and the Cavaliers, Herrick, Carew, Suckling, and Lovelace, with greater emphasis on Donne and the Metaphysicals, Herbert, Crashaw, Vaughan, and Marvel.

Three credit hours.

ENGLISH 122.

John Donne.

A close analysis of the writings of John Donne. Readings from his contemporaries in literature, politics, and philosophy will be studied in an attempt to establish the milieu of Donne's writing.

Three credit hours.

ENGLISH 125.

Milton.

This course proceeds from a study of Milton's early poems to the readings of *Paradise Lost*, *Paradise Regained*, and *Samson Agonistes*. Certain prose pamphlets are read either in their entirety or in selections.

Three credit hours.

ENGLISH 129.

Special Problems in Early 17th Century Literature.

A special course offered periodically for the examination of one form, theme or author in the 17th century.

Three credit hours.

ENGLISH 131.

Restoration and 18th Century Drama.

The course will survey drama from Dryden to Sheridan, including heroic drama, Restoration comedy, sentimental developments of the 18th century, and the reemergence of laughing comedy. Attention will also be paid to relevant intellectual background and influences.

Three credit hours.

ENGLISH 132.

Dryden, Pope and Swift.

A study of the literature from the Restoration to the death of Pope with major emphasis upon the writings of John Dryden, Jonathan Swift, and Alexander Pope.

Three credit hours.

ENGLISH 135.

Johnson and the Late 18th Century.

This course (which omits the novel) acquaints the student with Collins, Gray, Boswell, Johnson, Christopher Smart, Macpherson, Churchill, Walpole, Goldsmith, Sheridan, Beattie, Chatterton, Cowper, Burns, Crabbe, Burke, and Paine and Blake.

Three credit hours.

ENGLISH 137.

18th Century Novels.

A close examination of the novel as formal prose narrative. Novels by Defoe, Fielding, Richardson, Smollet, the Gothic novelists, Sterne and Austen are considered in detail. Collateral reading is also required.

Three credit hours.

ENGLISH 139.

Special Problems in the Restoration or 18th Century.

A special course offered periodically for the examination of one form, theme and author in the 18th century.

Three credit hours.

ENGLISH 141.

The English Romantic Poets.

A study of Romanticism as a movement and a close analysis of the major Romantic writers: Wordsworth, Coleridge, Byron, Shelley, Keats. Readings in the work of Romantic Contemporaries will also be discussed.

Three credit hours.

ENGLISH 145.

Tennyson and his Contemporaries.

This course will undertake a close study of the poems of Tennyson, Browning, and Arnold and the prose works of Arnold, Mill, and Carlyle.

Three credit hours.

ENGLISH 146.

Late Victorian Literature.

A study of the major figures in the last half of the 19th century, particularly the Rossettis, Ruskin, Newman, Swinburne, Morris, Meredith, Huxley, Pater, Hardy, Hopkins and the writers of the *fin-de-siècle* movement.

Three credit hours.

ENGLISH 147.

19th Century Novels.

A close examination of the novel as a formal prose narrative. Novels by Thackeray, Dickens, the Brontës, Eliot, Butler, James, and Conrad are considered in detail. Collateral reading in Scott, the Gothic novelists, Meredith, Trollope, Hardy, and others is also required.

Three credit hours.

ENGLISH 149.

Special Problems in the 19th Century English Literature.

A special course offered periodically for the examination of one form, theme or author in the 19th century.

Three credit hours.

ENGLISH 150.

Modern British Literature.

A survey of the major British poets and novelists since 1914. Concentration will be on the works of Yeats, Auden, D. H. Lawrence, Joyce, Aldous Huxley, and the new generation of writers since the close of World War II. *Three credit hours.*

ENGLISH 151.

Modern British Poetry.

A study of the major Modern British Poets dating from Hardy, Yeats, Eliot, and Auden will be examined in detail as representative of the directions in British poetry during the 20th century. *Three credit hours.*

ENGLISH 157.

Modern British Novel.

A study of the British novel and its development from Galsworthy to Braine. *Three credit hours.*

ENGLISH 160.

Survey of American Literature.

A survey of American literature from its Colonial beginnings to the time of Emerson and the Transcendentalists. *Three credit hours.*

ENGLISH 161.

Survey of American Literature.

A survey course studying the growth of American literature beginning with the Transcendentalists, extending through the Civil War up to the mid-20th Century. *Three credit hours.*

ENGLISH 162.

Colonial American Literature.

A study of the development of American literature from Smith to the American Revolution. Readings in Bradford, Edwards, Mather, Bradstreet and others. *Three credit hours.*

ENGLISH 164.

Hawthorne, Melville and Twain.

The detailed analysis of the major works of Hawthorne, Melville and Twain as representative of the writers, the literary tastes and the general cultural movements of the time. *Three credit hours.*

ENGLISH 165.

American Literature in the Age of Emerson.

A study of the times and contemporaries of Ralph Waldo Emerson. Readings from Emerson, Thoreau, Hawthorne, Melville, Poe and Whitman. *Three credit hours.*

ENGLISH 169.

Special Problems in the 19th Century American Literature.

A special course offered for the examination of special problems, authors, or themes in American literature of the 19th century. *Three credit hours.*

ENGLISH 170.

American Literature in the 20th Century.

A survey course in the developments in American literature from the late years of the Genteel Tradition to the present day. *Three credit hours.*

ENGLISH 171.

Modern American Poetry.

A close analysis of the development of American poetry from the late 19th Century to the present. Representative poets will be examined. *Three credit hours.*

ENGLISH 177.

Modern American Novel.

A study of the development of the modern American novel from the close of the 19th century to the present. Representative works of Wharton, Dreiser, Norris, Dos Passos, Hemingway, Faulkner and others are closely studied for an understanding of their artistic accomplishment and the milieu in which they are written. *Three credit hours.*

ENGLISH 179.

Special Problems in Modern American Literature.

A special course offered periodically for the examination of one form, theme or author in 20th century American literature. *Three credit hours.*

ENGLISH 180.

Survey of English Literature to 1660.

A survey history of English literature from the time of *Beowulf* to the end of the Puritan Commonwealth. Representative works will be analyzed in their relationship to the development of English literature, as well as reflections of their milieu. *Three credit hours.*

ENGLISH 181.

Survey of English Literature from 1660-To the Present.

A study of the major writings in English literature from the Restoration to the present. Emphasis is placed on literary, cultural and historical movements and their effect on the literature of the time. Open only to sophomore English majors and students not majoring in English. *Three credit hours.*

ENGLISH 182.

Major Authors (Chaucer to Pope).

This course concentrates on the major authors in English literature from the medieval to the classical period. It differs from English 180 in approach and treats fewer authors in greater detail. Open only to non-English majors. *Three credit hours.*

ENGLISH 183.

Major Authors (Johnson to Eliot).

This course concentrates on selected authors from the classical to the modern period. It differs from English 181 in approach and treats fewer authors in greater detail. Open only to non-English majors. *Three credit hours.*

ENGLISH 184.

Modern Drama.

The focus of this course will be drama since 1890 principally in England. Attention will also be given, however, to developments in the theater on the continent and in the United States.

Three credit hours.

ENGLISH 185.

Twentieth Century Irish Literature.

A survey of the developments in the poetry, drama and fiction of modern Ireland from the Gaelic Revival to the present. Attention will be focused on Yeats, Joyce, O'Casey, Synge among others.

Three credit hours.

ENGLISH 187.

Studies in the Novel.

An inclusive, but non-historical survey of the various approaches to the novel as a literary form. English novels of the 18th and 19th centuries will be studied and compared to similar continental works in the same form.

Three credit hours.

ENGLISH 188.

Problems in the Modern Novel.

A comparative study of English, American and Continental novels of the 20th century. The directions, forms, and preoccupations of the modern novel will be studied in an investigation of the range of contemporary fiction.

Three credit hours.

ENGLISH 190.

Tragedy.

A study of the theory of tragedy in dramatic and non-dramatic literature. Readings in Greek tragedians, Latin and Continental, as well as English and American literature.

Three credit hours.

ENGLISH 191.

Comedy.

A study of the theory of comedy in drama and other literary forms from the Greeks to the present day.

Three credit hours.

ENGLISH 192.

Satire.

A study of the concept of satire as it is found in all literary forms from the classical writers to the present day.

Three credit hours.

ENGLISH 193.

The Epic.

A study of the Epic as a literary form from Homer to Pound. Virgil, Dante, Milton, Byron and others will be examined in detail.

Three credit hours.

ENGLISH 195.

Criticism from Aristotle to Johnson.

A study of the major critical movements from Aristotle to Samuel Johnson with emphasis upon the classical theory of literature.

Three credit hours.

ENGLISH 196.

Modern Criticism.

An examination of twentieth century critical theory including that of such critics as I. A. Richards, Cleanth Brooks, Kenneth Burke, T. S. Eliot, Northrop Frye, etc.

Three credit hours.

ENGLISH 197.

History of the Language.

A one semester chronological study of English as a linguistic phenomenon. The course begins with a study of phonetics and then goes on to a historical analysis of the development of the language with attention to contemporary linguistic principles.

Three credit hours.

(Not offered 1969-70)

ENGLISH 198.

Introduction to Linguistics.

A general introduction to the science of linguistics including phonetics, phonemics, morphology, and syntax.

Three credit hours.

ENGLISH 199.

Comparative and Historical Linguistics.

The emphasis of the course is on linguistic geography, linguistic borrowing, the causes of linguistic change, the comparative method and reconstruction, and problems in analysing languages with and without literary tradition.

Three credit hours.

DEPARTMENT OF

Fine Arts & Music

Assistant Professors: Reardon, Scannell (Chairman)

Instructor: Quigley

Visiting Lecturers: Culley, Italiano, Miller

The Fine Arts curriculum is deliberately designed as an integral part of the liberal arts program of the College rather than as a terminal training program for professional work. Its aim is to increase student sensitivity to the visual arts, to refine the powers of critical analysis in the same arts, and to provide the student with visual means of creative expression. It follows that those who seek professional competency would be expected to pursue the field in graduate school; it is also to be concluded that the courses are not limited to those majoring in the fine arts. They are open to all students, in some cases as a minor related to their major field, and in all cases as free electives.

Requirements for the *major*:

a) Emphasis on Studio

F.A. 121, 122 Studio Drawing

F.A. 101, 102 History of Western Art.

Six semesters in studio courses.

b) Emphasis on Art History

F.A. 141, 142 Studio Painting.

Six semester courses in art history.

Students who plan to apply to graduate schools in art history should be aware that they will be expected to have competence in French, German, and Italian.

FINE ARTS 101.

History of Western Art I.

The architecture, sculpture and painting of ancient civilizations. Beginning with Egypt and Mesopotamia, following the developments in the major arts on to Minoan and the major Greek periods—archaic, Hellenic, and Hellenistic. Then the Roman contributions, followed by the Early Christian, Romanesque and Gothic. The study of painting begins to get major emphasis with the development of the manuscript traditions.

Three credit hours.

FINE ARTS 102.

History of Western Art II.

Not neglecting architecture and sculpture, the emphasis in this semester is on painting, proceeding from the Byzantine and medieval styles through the various stages of the Renaissance and Baroque; their diffusion through Spain, France, Germany, Holland and Flanders. Also considered are French Neo-classicism, Romanticism, and Realism, the rise of Impressionism, Expressionism, and the various schools of painting in the twentieth century.

Three credit hours.

FINE ARTS 111.

History of Oriental and African Art.

A basic understanding and knowledge of Oriental art, (China, Japan, Korea, Central Asia, Southeast Asia, and India) from the third millennium B.C. to the present. Aimed not only at clarifying the information from this area of study but also at discussions of its problems. Due to the vast range of the subject, it is hoped that the student will develop an understanding of the broad course of Eastern history, and especially how the art of the area reflects that history. Also the traditions and backgrounds necessary for an understanding of African art.

Three credit hours.

FINE ARTS 113.

History of American Art.

A depth course covering architecture from its colonial beginnings to the recent developments of Wright, Johnson, Saarinen and others. In the fields of sculpture and painting, the major artists from the early limners, through the Federal and later eclectic periods. Also the various movements from 1945 to the present are considered in their ideological and aesthetic roots.

Three credit hours.

FINE ARTS 116.

History of Modern Painting.

Beginning with the revolt of David from the previous academic traditions, this course traces the multiple movements and ideologies that have taken place in the last century. The emphasis in the course is on the many painting styles and underlying philosophies, but modern sculpture and architecture are also treated.

Three credit hours.

FINE ARTS 119, 120.

Fundamentals of Visual Experience.

Composition, materials, and color—the visual elements of the object—are the main points in investigating sensitivity to traditional and contemporary form. Discussions, slides, and student experimentation dealing with: how design qualities reflect the philosophies of a specific age; the substantial effect of materials on expression in the end product; the important connection between material and creative intuition; color as a structural, psychological, and emotional element; color in design; tension between color and line; color interaction. Emphasis on awareness of esthetic properties in things around us; how our environment works visually, in space; why and when it succeeds or fails.

Six credit hours.

FINE ARTS 121, 122.

Studio Drawing.

Gradual progression in both dry (pencil, conte, pastels, crayon) and wet (pen and ink, Japanese brush, magic marker, watercolor) techniques. The purpose is to investigate the special properties of line, volume, texture and color by the interaction of different tools on different surfaces. The importance of the art of drawing as an end product in itself, and as the preliminary necessity in the visualization and execution of a mental image. Informal discussions and slides on draughtsmanship through history.

Six credit hours.

FINE ARTS 131, 132.

Printmaking.

The methods of producing multiple art. Investigation of their special characteristics, advantages and drawbacks. Techniques include linocut, woodcut, collograph, stencil, silkscreen, found object, monotype, tire relief, other experimental techniques (also, tentatively, drypoint, engraving, etching, lithography). Informal discussions and slides on the history of printmaking, the resurgence of the print today, its relation to the new realms of advertising art. Previous experience in drawing, or F.A. 121 or F.A. 141 recommended. *Six credit hours.*

FINE ARTS 141, 142.

Studio Painting.

An exploration of the fundamental problems of visual expression involving the elements of form, space, value, and color. In the first semester, emphasis is placed on the organization of space by the use of line, form, shape, and pattern. Studies and exercises are undertaken in pencil, ink and wash, pastel, oil and polymer painting. The second semester continues the development of visual organization and technical proficiency in the major techniques of painting involving landscape, still life, figure, abstract, and non-objective subject matter. Special projects and background reading assignments augment studio lectures, demonstrations, and work projects. *Six credit hours.*

FINE ARTS 161, 162.

Modeling and Sculpture.

A studio course which introduces the student to a creative understanding of three-dimensional design, form, and the control of techniques and materials involved. Personal expression is encouraged through the use of a variety of modeling and sculpture media including clay, plaster, cement, wood, metal, and plastics. Principles of three-dimensional design, analysis and synthesis of form are explored with figurative and abstract subject matter. Casting techniques in plaster, aggregates, sand, and cement are introduced. *Six credit hours.*

FINE ARTS 181, 182.

History of Music.

This course is intended for anyone in the college who would like to acquaint himself with the rudiments of music and the masterpieces of music. A few weeks are spent on the philosophy of art in general and the place of music within the artistic spectrum; then a few more weeks are devoted to establishing a precise semantic for the technical material to be presented. The remainder of the semester is given to a chronological study of music history beginning with Gregorian Chant and ending with the Classic Period. The second semester continues with the chronological discussion ending with the trends of present day composers. *Six credit hours.*

FINE ARTS 183, 184.

Music Theory.

The course is intended for students who wish to delve more deeply into the philosophy, aesthetics, and technique of traditional composition and performance. There are three main areas of concentration:

1. Basic Theory—terminology, notation, ornamentation, etc.
2. Ear-training—the rudiments of sight-singing and dictation so that the student may come to cope with a piece of vocal or instrumental music *a prima vista*.
3. Written Theory—this section of the course presents much of the material of Traditional Harmony in a manner which is calculated to challenge the student's creative abilities as well as his ability to conform to a discipline.

It is hoped that each student who takes this course will be able to write successfully in four parts, will be able to sing confidently materials of some difficulty, and will have a working knowledge of the terminology and notation of music at the completion of the course.

Six credit hours.

FINE ARTS 188.

Opera as Drama.

A one semester course devoted to an examination of opera as a composite art form. Attention is focused upon its major developments from the close of the 18th century to the present. Representative operas of Mozart, Verdi, Wagner, Puccini, Strauss, and Berg are examined in order to determine the directions and resources employed in the evolution of modern opera following the Baroque period.

Three credit hours.

FINE ARTS 201, 202.

Special Projects.

Tutorial work under departmental direction, suited to needs and interests of the student.

Six credit hours.

FINE ARTS 221, 222.

Advanced Studio Drawing.

Continuation of exercises in hand—eye coordination and conversion of three dimensional space to the flat plane; with experimental techniques and awareness, through drawing, of peculiarities of style in the past and present. Prerequisite: F.A. 121, 122.

Six credit hours.

FINE ARTS 241, 242.

Advanced Studio Painting.

This course continues individual development in the major painting techniques and encourages investigation in some of the less common modes of visual expression. Emphasis is placed on the complex and evolving dynamics of space organization as well as the development of personal technical skills. Traditional and contemporary styles of painting become a vital part of the student's growth through special assignments, readings, and studio projects. Prerequisite: Fine Arts 141, 142.

Six credit hours.

FINE ARTS 261, 262.

Advanced Modeling and Sculpture.

Continues and expands the fundamental concepts of three-dimensional design and form-structure inherent in contemporary and traditional approaches to sculpture. The expressive and organizational possibilities of figurative and abstract form are explored by means of individual and group projects involving constructions, modeled and direct built forms, and carving techniques. Methods of casting in plaster, cement, metal, and aggregates are further developed. Special projects and reading assignments supplement lectures, demonstrations, and work projects in the studio. Prerequisite: Fine Arts 161, 162.

Six credit hours.

DEPARTMENT OF

History and Political Science

Professors: Corcoran, Higgins, Lucey, Reidy

Associate Professors: Brandfon, Duff, J. Flynn (Chairman), Green, Kealey, Kinsella, Schiff, Wall

Assistant Professors: Ford, Powers

Instructors: John Anderson, Holmes, Martin, Moggio, Newman, Rust

Visiting Professors: Harvey, Van Valkenburg

Visiting Assistant Professor: Hen-Tov

Lecturer: Shea

HISTORY

Historical knowledge, acquired by scientific method and presented with literary art, provides the means of understanding another age or society or a culture other than one's own, of entering fully into the life of the past, of knowing its presuppositions, outlook and spirit, and of learning how to interpret it. History establishes perspective as a defense against excessive "presentism," frees us from preconceptions, and enables us to place ourselves, in the atomic and space era, in relation to other individuals, societies and ages. Basically humanistic, with all civilization for its province, by its very character history is the bridge between the humanities and the sciences.

A major in history requires a minimum of ten semester courses in history. A maximum of fourteen semester courses in history may be taken. A major in history requires two semester courses, and may include no more than four semester courses, from the following: History 11-12, History 13-14, History 15-16. Although there are no formal prerequisites for upper division courses, the student is encouraged to discuss with the History Department the nature of each course and its relevance to the student's program before registration.

Honors students are afforded opportunities to participate in seminars and research projects by arrangement with the department.

The College core requirement in history is met by two semester courses of any of the following: History 11-12, History 13-14, History 15-16, History 55-56. History 55-56 may be taken as the core course only by students, who, in the judgment of the Department, have completed in secondary school an appropriate course on European history.

HISTORY 11, 12.

Europe to 1500.

A study of the significant developments in European History down to the sixteenth century. *Six credit hours.*

HISTORY 13, 14.

Europe since 1500.

A study of the significant developments in European History from the sixteenth century to the present time. *Six credit hours.*

HISTORY 15, 16.

Western Civilization.

A study of significant developments in Western Civilization from Christian Antiquity to the present time. *Six credit hours.*

HISTORY 21, 22.

The Elements of Western Civilization.

Honors Colloquium for Freshmen. Consideration of selected themes in the development of Western Civilization. (part of Freshman studies program.)

Six credit hours.

HISTORY 23.

Honors Colloquium for Sophomores.

Consideration of selected themes in European History, 1500 to present.

Three credit hours.

HISTORY 24.

Honors Colloquium for Sophomores.

Consideration of selected themes in American History.

Three credit hours.

HISTORY 41.

History of Greece.

This course is offered by the Department of Classics as Greek 57.

Three credit hours.

HISTORY 42.

History of Rome.

This course is offered by the Department of Classics as Latin 70.

Three credit hours.

HISTORY 43, 44.

The Early Middle Ages.

A close examination of the historical and institutional changes which saw medieval Europe evolve from a late Roman foundation. Christianity, Roman civilization and the Germanic invader are studied with the objective of understanding their critical interaction and its influence upon the new beginnings of Western man.

Six credit hours.

(Not offered 1969-70)

HISTORY 45, 46.

The High Middle Ages.

A study of how two conceptions (the changing values of feudalism and the growth of a reformed Papacy) combined to create a new Medieval World based on increasingly strong monarchies (England and France) and heightened intellectual speculation (St. Anselm, the rise of the universities). Rome, the Empire, England and France are the focal points in this study which will stress source readings and independent investigation.

Six credit hours.

HISTORY 47, 48.

Renaissance-Reformation.

A survey of the major intellectual and social currents in Europe between 1250 and 1600. Reading of source materials will be stressed.

Six credit hours.

HISTORY 51, 52.

Europe in the Nineteenth Century.

Napoleonic Era; Congress of Vienna, Political and Social Revolutions; Unification of Germany and Italy; Russia; the British Empire; Social Theories.

Six credit hours.

HISTORY 53, 54.

Europe in the Twentieth Century.

The causes of World War I; The Versailles Treaty; the League of Nations; Russia and Bolshevism; Nazism, Fascism; the Far Eastern Situation; the Spanish War of 1936; World War II.

Six credit hours.

(Not offered 1969-70)

HISTORY 55.

The United States from the Colonial Period to the Civil War.

A study of political, social, economic, and cultural developments in the United States from the early settlements to the end of the Civil War.

Three credit hours.

HISTORY 56.

The United States since 1865.

A continuation of History 55 to the present time.

Three credit hours.

HISTORY 61, 62.

History of Political Thought.

Analysis of selected political ideas of Western thinkers from ancient Greece to present; special attention is given to the historical contexts of these ideas and to their normative and predictive value.

Six credit hours.

HISTORY 101.

The English Colonies in North America, 1609-1763.

The transplantation and transformation of European institutions and values in a New World, the growth of a distinctive Anglo-American society in North America.

Three credit hours.

HISTORY 102.

The Age of the American Revolution, 1763-1800.

Revolution and independence in the context of English and Anglo-American ideas and institutions: the collapse of imperial ties, the ideology of revolution, the new constitutions, the beginnings of political parties in the 1790s and the debate over the French Revolution.

Three credit hours.

HISTORY 103, 104.

American Political History in the Nineteenth Century.

A study of the political parties, personalities and issues which influenced the course of American politics in the nineteenth century. The first semester will consider the period to 1850; the second, the period from 1850-1900. Among the topics considered in the first semester: the origin of parties, the Jeffersonian system, the Era of Good Feelings, and Jacksonian Democracy. Among the topics considered in the second semester: politics and the coming of the war, Reconstruction, the era of the spoilsmen, and the beginning of reform.

Six credit hours.

(Not offered 1969-70)

HISTORY 105, 106.

The United States in the Twentieth Century.

A study of the salient political, social, economic and cultural developments in the history of the United States from the end of the nineteenth century to the recent past. Each semester selected problems of particular importance will be given special consideration. *Six credit hours.*

HISTORY 107, 108.

Diplomatic History of the United States.

A study of the foreign policies and relations of the United States with regard to Europe, Latin America, Canada, Africa, and the Far East. *Six credit hours.*

HISTORY 109, 110.

The American Westward Movement.

A two semester course dealing with the story of the conquest of the American continent and its appropriation to the uses of civilized man. *Six credit hours.*
(Not offered 1969-70)

HISTORY 111, 112.

American Social and Intellectual History.

An exploration of the development of the American mind under the impact of political, economic, and social changes. *Six credit hours.*

HISTORY 113.

History of the American South, 1607-1850.

History of the South with emphasis on the development of a particular sectional conscience. The course will deal with the political, cultural, economic, religious, racial and literary aspects of Southern life as distinct from the national pattern. *Three credit hours.*

HISTORY 114.

History of the American South, 1850-1968.

History of the South as it faced the national challenge. Particular emphasis will be placed on the challenge to rural provincialism on the part of the growing forces of industrialism and the federal government. *Three credit hours.*

HISTORY 124.

Constitutional and Legal History of England.

Origin and development of the parliamentary system and the common law. *Three credit hours.*

HISTORY 125.

Tudor England, 1485-1603.

This course emphasizes religious, political and economic factors from the beginning of the reign of Henry VII to the end of the reign of Elizabeth I. *Three credit hours.*
(Not offered 1969-70)

HISTORY 126.

Stuart England: 1603-1714.

This course emphasizes religious, political and intellectual factors from the beginnings of the reign of James I to the end of the reign of Anne. *Three credit hours.*
(Not offered 1969-70)

HISTORY 127.

Hanoverian England.

A study of the religious, political, economic, and intellectual factors in English History from the accession of George I to the Reform Act of 1832.

Three credit hours.

(Not offered 1969-70)

HISTORY 128.

Victorian and Modern England: 1832 to the present.

Emphasis is placed on the political, economic and intellectual factors in English History from the Reform Act of 1832 to the outbreak of World War II. A brief analysis of the period since 1939 is also given.

Three credit hours.

(Not offered 1969-70)

HISTORY 133.

France under the Old Regime.

Political, social, economic, intellectual and religious developments from the Age of Louis XIV to the French Revolution. Emphasis is placed on the structure of society, the struggle for empire, and the Enlightenment.

Three credit hours.

HISTORY 134.

The Era of the French Revolution and Napoleon.

Domestic and foreign developments with emphasis on the nature, extent and significance of the era.

Three credit hours.

HISTORY 135.

France, 1815-1870.

Foreign affairs and domestic political, social, economic, intellectual and ecclesiastical problems from the Restoration through the Second Empire.

Three credit hours.

(Not offered 1969-70)

HISTORY 136.

The Third French Republic.

France 1870-1940 with emphasis on political, constitutional and economic developments; Church and State, political and social thought; imperialism and foreign relations.

Three credit hours.

(Not offered 1969-70)

HISTORY 137, 138 (formerly 135, 136).

The Fifth French Republic.

An intensive study of the breakdown of the Fourth Republic, the creation of the new order, and the emergence of de Gaulle's system. Selected case studies to be used as illustrations of this development.

Six credit hours.

HISTORY 151.

History of Russia to 1917.

A survey of the economic, social, religious, political and cultural history of the Russian people from the period of ancient Kiev to the revolutions of 1917.

Three credit hours.

HISTORY 152.

History of the Soviet Union.

A study of the development of Russia from Bolshevik revolution of 1917 to the present day. *Three credit hours.*

HISTORY 153.

Imperial Russia 1700-1825.

This course examines the development of Russia under the tsarist autocracy, from Peter the Great to the December Revolt. Emphasis is given to "westernization"—modernization in economic, political, and social organization—and to competing ideologies, conservative as well as radical. Foreign affairs are given less attention than domestic, especially institutional and intellectual, affairs. *Three credit hours.*
(Not offered 1969-70)

HISTORY 154.

Imperial Russia 1825-1917.

This course examines the experience of tsarist Russia, from Nicholas I to the collapse of the autocracy in 1917. Emphasis is given to "westernization"—modernization in economic, political, and social organization—and to competing ideologies, conservative as well as radical. Foreign affairs are given less attention than domestic, especially institutional and intellectual, affairs. *Three credit hours.*
(Not offered 1969-70)

HISTORY 155.

Diplomatic History of Nineteenth Century Russia.

This course concerns Russia and the great European powers throughout the Nineteenth Century. It will focus particularly on Russian expansion in Central Asia, and Russian relations with the Ottoman Empire in the Balkans, while examining political doctrines and cultural movements in Russia which moulded and shaped Russian foreign relations. *Three credit hours.*

HISTORY 156.

Soviet Foreign Policy: 1917-1964.

An examination of Soviet Foreign Policy under Lenin, Stalin, and Khrushchev. Analysis of ideology and doctrinal formulations *versus* international political realities. *Three credit hours.*

HISTORY 161, 162.

History of Spain and Portugal.

A study of the historical evolution of the peoples of the Iberian Peninsula from their Roman origins to the emergence of modern Spain and Portugal in the twentieth century. Emphasis will be placed on political, social and economic developments, with particular attention given to the medieval struggle for unity and the era of overseas expansion during the Renaissance and Reformation. *Six credit hours.*

HISTORY 163.

Modern East Central Europe.

This course traces the development of Poland, Czechoslovakia, Austria, Hungary, and the Balkan states. Approximately equal stress is given to each of the following: the historical foundations to 1815, the nineteenth century through World War I, the inter-war period, World War II and the Soviet satellite empire. *Three credits hour.*

HISTORY 164.

Bureaucratic Empires in the Nineteenth Century: Imperial Germany, Imperial Russia, and the Hapsburg Empire.

This course examines the experience of the absolutist—bureaucratic empires of Europe, from the mid-nineteenth century to their collapse in World War I. Attention is also given to the Ottoman Empire in Europe and to the organization by 1920 of the states which emerged from the collapse of the imperial structures.

Three credit hours.

HISTORY 165.

History of Tropical Africa.

This course offers a multi-disciplinary treatment of Africa south of the Sahara desert, with emphasis upon the distinctive characteristics of tropical history. Geographic and demographic factors are stressed. Historical emphasis is given to medieval African empires, the slave trade, commercial exchange with Europe and Asia, and the imposition of European rule in the 19th century. The nationalist movement and current problems of economic under-development and social change will be examined.

Three credit hours.

HISTORY 166.

History of Southern Africa.

The history of Southern Africa is given thematic treatment from 1652 to the establishment of the Union of South Africa. The expansion of European power into Rhodesia and the consolidation of a Portuguese empire in Mozambique and Angola will be treated. Principal emphasis will be given to the social, economic, and political complexities of South Africa after 1910. The course will examine the international ramifications of South African apartheid and Rhodesian independence.

Three credit hours.

HISTORY 167, 168.

History of Latin America.

A study of the colonial and national histories of Latin American Republics. An examination of the role of Latin America in the Modern World will be included during the second semester.

Six credit hours.

(Not offered 1969-70)

HISTORY 169, 170.

The Far East in Modern Times.

A study of the political, social, and economic history of the Far East; China, Japan, Philippine Islands, India, Pakistan, Burma, Indo-China, Malaya, and Indonesia.

Six credit hours.

HISTORY 171.

The Emergence of Arab Nationalism in the Middle East.

The history of the Middle East from the early nineteenth century to the end of World War I. The main theme of the course is the rise of the Arab nationalist movement, its ideology, its leadership, and its struggle against the Ottoman empire.

Three credit hours.

HISTORY 172.

The Contemporary Middle East in World Affairs.

The history of the Middle East from the end of World War I to the present. Emphasis is placed upon the influence of the West on the social and political transformation of the area.

Three credit hours.

HISTORY 173, 174.

Modern European Imperialism.

This course examines the impact of modern European imperial expansion upon distant continents and alien societies. The systems of empire employed by the European powers and the nature of their commercial and political competition will be stressed. Principal emphasis will be given to the empire of Great Britain in the period after 1750. The slave system of the Atlantic basin, the abolition of the slave trade and slavery, the decline of the West India plantation colonies, the impact of free trade upon the colonial empire, and the establishment of settlement colonies in Australasia, South Africa, and Canada will receive treatment. The second semester will focus upon the new imperialism of the late 19th century, the transition from Empire to Commonwealth, and the process of decolonization in the wake of World War II.

Six credit hours.

(Not offered 1969-70)

HISTORY 201.

Historical Methodology.

History and its relation to the social sciences; methods of research and criticism; historians and historical writings; theory and interpretation.

Three credit hours.

HISTORY 203.

Reading Course in History and Government.

Reading of a selected list of documentary and authoritative works under direction with individual reports and discussion. Students enrolled in this course must receive approval of the Department.

Three credit hours.

HISTORY 204.

Reading Course in History and Government.

Reading of a selected list of documentary and authoritative works under direction with individual reports and discussion. Students enrolled in this course must receive approval of the Department. (This is not a continuation of 203.)

Three credit hours.

HISTORY 206.

Democracy in America.

Seminar based on A. de Tocqueville's *Democracy in America*. Students enrolled in this course must receive approval of the Department.

Three credit hours.

HISTORY 207, 208 (formerly 97, 98).

Research Project and Thesis.

Seniors in honors may undertake a research project and thesis with approval of the Department.

Six credit hours.

POLITICAL SCIENCE

Political Science is the systematic study of the political aspects of man's nature and of the state. It studies human nature in its behaviour as it is affected by changing political processes and situations, the motivation and action of individual leaders, public officials, social and economic groups, public opinion, the process by which public policy is fashioned and patterns of political activity develop. It investigates the nature and purpose of the state, the principles on which it rests, the justification of political authority, the struggle for control of the state, problems of legislation and administration, the relationship between man and his government, the role of the state in achieving the "good life," the legal aspects of political phenomena, the organization, practice and principles underlying court systems, the nature and development of the great human freedoms, the governmental procedures of different countries, and the relations of states in the family of nations.

A major in political science requires a minimum of ten semester courses, including Political Science 11, 12.

POLITICAL SCIENCE 11, 12.

Introduction to Politics.

This course is designed to afford the student an understanding of the basic phenomena of politics. Emphasis will be placed on such themes as leadership, power and consent, conflict and resolution and stability and change. A wide variety of political ideologies and political institutions will be studied and evaluated in terms of the effects men have desired to produce.

Six credit hours.

POLITICAL SCIENCE 101, 102.

American Government.

An examination of the origin of the federal republic, and a study of the constitutional government and democracy in the United States on the national level.

Six credit hours.

POLITICAL SCIENCE 103, 104.

Diplomatic History of the United States.

A description of this course will be found under History 107, 108. *Six credit hours.*

POLITICAL SCIENCE 105, 106.

American Political Parties.

A study of the theory and practice of political parties in the United States.

Six credit hours.

POLITICAL SCIENCE 107, 108.

Constitutional History of the United States.

An examination of the origin and content of the Constitution, of the nature of the federal republic and the presidential system, of the development of the Constitution and of current constitutional problems.

Six credit hours.

POLITICAL SCIENCE 109.

Public Administration.

A survey of the scope and methods of governmental operation and regulation in the United States. Some comparisons will be made with selected countries on such topics as: administrative organization, bureaucracy, financial management and control, regulation and development of the economy. Attention will be given to administrative decision-making and development of public policy, and the importance of the management concept in public administration. *Three credit hours.*

POLITICAL SCIENCE 110.

Problems in Public Administration

A number of problems and cases will be examined which involve governmental operations, management and the regulatory process. *Three credit hours.*

POLITICAL SCIENCE 111.

State and Local Government.

The effect of the traditional organization and role of American federalism on state and local government and the changes taking place on the modern age. Topics to receive attention include: legal organizational foundations, the effects of social and economics pressures on governmental organizations and services at this level. Students will make a survey of a state or local government agency. *Three credit hours.*

POLITICAL SCIENCE 112.

Government and Politics of Metropolitan Areas.

The nature of the modern metropolitan phenomenon and the effect it has on government and politics. Approaches to metropolitan problems and solutions. Field studies of Metropolitan Worcester will be conducted. *Three credit hours.*

POLITICAL SCIENCE 141.

Greek Political Philosophy.

This course is offered by the Department of Classics as Greek 41.

Three credit hours.

POLITICAL SCIENCE 142.

Roman Political Ideas.

This course is offered by the Department of Classics as Latin 42.

Three credits hours.

POLITICAL SCIENCE 151, 152 (formerly 45, 46).

International Relations.

The multi-state system and its development; the distribution and influence of material and social-psychological factors in world politics; nationalism; concepts of the national interest; the role of power and ideology in the behavior of states; the morality of nations; military policy and the cold war; problems of prediction and the adjustment of interstate conflict. *Six credit hours.*

POLITICAL SCIENCE 153, 154.

Comparative Government of the Major Western European Powers.

Survey of the political systems and cultures of Great Britain, France and West Germany: the forms of government, distributions of power, political traditions, and underlying social orientations. *Six credit hours.*

POLITICAL SCIENCE 155, 156.

The Fifth French Republic.

An intensive study of the breakdown of the Fourth Republic, the creation of the new order, and the emergence of de Gaulle's system. Selected case studies to be used as illustrations of the development.

Six credit hours.

POLITICAL SCIENCE 158.

Constitutional and Legal History of England.

Origin and development of the parliamentary system and the common law.

Three credit hours.

POLITICAL SCIENCE 161, 162.

History of Western Political Thought.

Analysis of selected political ideas of Western thinkers from ancient Greece to present; special attention is given to the historical contexts of these ideas and to their normative and predictive value.

Six credit hours.

POLITICAL SCIENCE 163.

Industrial Organization and Public Policy.

This course is offered by the Department of Economics as Economics 75.

Three credit hours.

POLITICAL SCIENCE 165.

Soviet Government and Politics.

This course concerns itself with the nature of the Soviet system of government. It analyzes the dynamics of modern totalitarian dictatorship and emphasizes the role of the Party as it is reflected in domestic political developments.

Three credit hours.

POLITICAL SCIENCE 166.

Selected Topics in Soviet History and Politics.

Students enrolled in this course must receive the approval of the Department.

Three credit hours.

POLITICAL SCIENCE 167.

The Emergence of Arab Nationalism in the Middle East.

A description of this course will be found under History 171.

Three credit hours.

POLITICAL SCIENCE 168.

The Contemporary Middle East in World Affairs.

A description of this course will be found under History 172.

Three credit hours.

POLITICAL SCIENCE 169.

Diplomatic History of Nineteenth Century Russia.

A description of this course will be found under History 155.

Three credit hours.

POLITICAL SCIENCE 170.

Soviet Foreign Policy: 1917-1964.

A description of this course will be found under History 156.

Three credit hours.

POLITICAL SCIENCE 172.

The U.S.S.R.

This course is offered by the Department of Sociology as Sociology 71.

Three credit hours.

POLITICAL SCIENCE 173, 174.

Political Geography.

Major political problems of the world as related to geographic factors and applied to selected regions.

Six credit hours.

(Not offered 1969-70)

POLITICAL SCIENCE 176.

Contemporary Christian Political Perspectives.

Using *Pacem in Terris* as a methodological guide (supplementing it with documents from World Council of Churches' Assemblies, plus other papal encyclicals and Vatican II constitutions), the course analyzes the attitudes toward the present political order advocated by major Christian bodies.

Three credit hours.

POLITICAL SCIENCE 178.

International Organization and Policy.

A study of the history, structure and functioning of the United Nations and its specialized agencies.

Three credit hours.

POLITICAL SCIENCE 201, 202.

Seminar in Political Science.

Research with individual reports on selected topics. Students enrolled in this course must receive approval of the Department.

Six credit hours.

POLITICAL SCIENCE 203.

Seminar in Intergovernmental Relations.

Three credit hours.

POLITICAL SCIENCE 204.

Seminar in Urban and Regional Development.

Three credit hours.

DEPARTMENT OF

Mathematics

Professors: McBrien (Chairman), Shanahan

Associate Professors: Perkins, J. MacDonnell

Assistant Professors: Dewey, J. R. McCarthy, O'Toole, Sulski, Tews

The program in mathematics is based upon the awareness of the increasing contribution of mathematics to contemporary culture as well as its key role in scientific and humanistic education. Because mathematics has undergone basic changes in content as well as in point of view, there is strong emphasis in all courses on a synthesis of old and new concepts.

Seminars, individual discussion and research projects are an integral part of the department program. Mathematics majors have the use of a Common Room for informal discussion with staff members and fellow students. The O'Callahan Science Library has a fine selection of classical and contemporary mathematics books, monographs and journals available to all students in the College. The College has an I.B.M. system/360, Model 30, computer with time available for instruction and research in computer science.

A mathematics major is required to complete eight semester courses in mathematics. For students entering Holy Cross in 1969 the number of semester courses in mathematics is nine.

MATHEMATICS 21, 22.

Introductory Calculus and Probability I, II.

Topics covered are the algebra of sets, operations with functions, coordinate geometry, limits and continuity of real functions, integration and differentiation of the algebraic, exponential, logarithmic and trigonometric functions. The student learns to handle truth tables and combinatorial counting problems. Then the concepts of probability measure, independent trials process, mean and variance of random variables, Chebyshev's inequality and the law of large numbers are considered. Topics are selected from Markov chains and continuous probability.

Six credit hours.

MATHEMATICS 31, 32.

Principles of Analysis I, II.

This course in the calculus of real functions is intended for students who are planning to take further work in mathematics. It begins with a brief study of the algebra of sets, the algebra of functions, and the basic properties of the real number system. It goes on to consider the integral and differential calculus of the algebraic, logarithmic, exponential and trigonometric functions with applications to maxima and minima problems and some elementary differential equations. The second term includes topics from vector algebra, the calculus of curves and surfaces, the mean value theorem and Taylor's series with applications to scientific problems.

Six credit hours.

MATHEMATICS 33, 34.

Freshman Honors Section in Mathematics.

The mathematical material varies from year to year but usually the topics are selected from analysis and abstract algebra.

Topics studied in the 1968-69 course were from the general areas of calculus and algebra, correlating the two by examining the algebraic structure of function algebras which are defined by concepts from the calculus. Specific topics include the concept of area, integration and differentiation, infinite series and sequences, the real numbers as a complete ordered field, rings, groups, ideals and factorization.

Six credit hours.

MATHEMATICS 41, 42.

Principles of Analysis III, IV.

This course is a study of the calculus of several variables. The first term covers double and triple integrals with applications, transformation of integrals and the Jacobian, transformation of coordinates, the derivative and gradient of a scalar field, the chain rule for partial derivatives, and problems involving maxima and minima. Topics covered in the second term include an introduction to line integrals, Green's theorem, curl and divergence of vector fields, surface area, special first and second order differential equations, linear differential equations including power series solution, and topics in numerical analysis.

Six credit hours.

MATHEMATICS 43.

Linear Algebra.

This course provides an introduction to the study of vector spaces over the real and complex number fields. Topics covered include linear subspaces, quotient spaces, linear transformations, matrices and determinants. Equivalence of matrices is then considered, leading to the row echelon form and its various applications.

Three credit hours.

MATHEMATICS 51.

Computer Programming.

After an introduction to computer number systems and design and logical construction of computers and the IBM 360-30 in particular, there is an introduction to computer programming and flow charting. Computer languages and their development are followed by an introduction to FORTRAN Programming. This is further developed towards advanced FORTRAN Programming. Then follows a treatment of computer operating systems and "large systems" with FORTRAN IV language. A brief treatment of other languages, COBOL, PL/I, etc., concludes the course. In general, approaches to problem solving *via* computer will be emphasized rather than merely learning one programming language.

This course does not fulfill a mathematics requirement for any departmental major.

Three credit hours.

MATHEMATICS 52.

Advanced Computer Programming.

This course is a continuation of Mathematics 51. It consists of an in-depth study of the PL/I language, with particular attention to its List Processing and File Handling capabilities. Advanced topics in computer problem analysis are included. Extensive laboratory projects using the computer are expected. Prerequisites: Completion of Mathematics 51, with a grade of B or better, or equivalent experience at the discretion of the instructor.

This course does not fulfill a mathematics requirement for any departmental major.

Three credit hours.

MATHEMATICS 102.**Differential Geometry.**

This is a first course in the differential geometry of curves and surfaces for students who have completed a year course in calculus and a semester course in linear algebra. Topics covered include the Frenet-Serret formulas, smooth surfaces in \mathbb{R}^3 , fundamental forms, differentiable manifolds, vector fields, connections and a brief introduction to Riemannian geometry.

Three credit hours.

MATHEMATICS 104.**Ordinary Differential Equations.**

The first part of the course deals with linear differential equations; basic existence theorems are proved, equations with constant coefficients are treated in detail, and series methods are investigated in detail for the cases where the coefficients are either analytic or have Fuchsian singularities. Second-order boundary value problems are discussed with the self-adjoint cases treated in detail and the concept of operators acting on vector spaces is used. Differential equations with periodic coefficients are also treated. Non-linear systems will be discussed, the topics treated being existence and uniqueness theorems, series methods, stability theory, including a brief introduction to Lyapunov's direct method, and periodic systems.

Three credit hours.

MATHEMATICS 106.**Theory of Probability.**

This course in the algebra and calculus of probability includes the following topics: basic notions of probability defined on discrete sample spaces, combinatorial analysis, conditional probability, the binomial, Poisson and normal distributions and the DeMoivre-Laplace limit theorem; random variables and their numerical characteristics, generating functions, recurrent events, random walks and Markov chains, limit theorems and the laws of large numbers.

Three credit hours.

MATHEMATICS 108.**Affine and Metric Geometry.**

This course uses linear algebra to study affine and metric geometry. Topics considered include n -dimensional affine spaces over a vector space V , coordinate systems, parallelism, affine transformations, the theorems of Desargue and Pappas, metric vector spaces, orthogonality, quadratic forms, and a study of isometries.

Three credit hours.

(Not offered 1969-70)

MATHEMATICS 141, 142.**Advanced Calculus.**

After a review of the elements of linear algebra, which includes vector spaces, linear transformations, the scalar product and the vector product, and the adjoint of a transformation, the following topics are taken up: the calculus of vector-valued functions, the Frenet equations, steady flows, real-valued functions of several variables, line integrals, the differential, the implicit function theorem, tensor products and exterior algebra, differential forms, integrals of forms over singular chains, the de Rham theorem.

Six credit hours.

MATHEMATICS 143, 144.**Theory of Complex Functions.**

This course begins with a brief review of the algebraic structure of the complex numbers and those basic topological concepts associated with the ideas of limit and continuity. The idea of an analytic function is then introduced and, in the light of this notion, a thorough study is made of elementary functions. Subsequent topics include contour integration, the Cauchy integral formula with its consequences, the Taylor and Laurent series-expansions, and the residue theorem with its applications. Mapping properties of complex functions and some examples of conformal mapping are also presented. With the fundamentals of complex function-theory established, some of the uses of this theory in the field of applied mathematics are considered.

Six credit hours.

(Not offered 1969-70)

MATHEMATICS 151, 152.**Abstract Algebra.**

The purpose of this course is to provide a systematic development of algebraic systems and to study those topics which are most useful in the application of algebra to other parts of mathematics and to other sciences. Topics covered include quotient groups, exact sequences, the isomorphism theorems, vector spaces and linear transformations, field extensions with some Galois theory, modules, tensor products, and topics in Noetherian rings.

Six credit hours.

MATHEMATICS 161, 162.**Real and Abstract Analysis.**

Topological ideas are introduced through a treatment of metric space topology. After the study of open, closed, compact and connected spaces with emphasis on their behavior under continuous mappings, selected topics from functional analysis are considered. These include \limsup and \liminf , relation of uniform convergence to differentiation and integration, and the Stone-Weierstrass approximation theorem. The second semester topics include an introduction to measure theory and Lebesgue-Stieltjes integration, Hilbert space and other material from linear space theory.

Six credit hours.

(Not offered 1969-70)

MATHEMATICS 163, 164.**Algebraic Topology.**

The first six weeks are spent acquainting the student with topological problems and various topological invariants used to solve them. After an introduction to the elements of point-set topology, the following topics are considered: complexes, homology groups, incidence matrices and computational methods, the Euler-Poincaré formula, invariance of homology groups, classification of closed surfaces, three-dimensional manifolds, n -dimensional manifolds including Poincaré duality, cohomology groups, the cup product, axioms for homology, and homotopy groups.

Six credit hours.

MATHEMATICS 171, 172.**Methods of Numerical Analysis.**

The principal methods to be studied are: approximation of functions, methods of linear topological spaces and linear operators, iterative and topological methods, relaxation, interpolation and extrapolation, perturbation and graphical methods. Applications to computation of series, systems of linear equations, ordinary and partial differential equations, and eigenvalue problems will be included with practical experience in the computer laboratory.

Six credit hours.

(Not offered 1969-70)

MATHEMATICS 173, 174.**Principles and Techniques of Applied Mathematics.**

The primary aim of this course is the understanding of a wide spectrum of scientific phenomena through the use of mathematical ideas, abstractions, methods and techniques. One of the principal aims will be to formulate idealized but relevant techniques. Topics included will be: ordinary differential equations: the heat equation, eigenvalue problems; partial differential equations: Poisson's theorem and examples; calculus of variations: Fourier analysis: the inversion problem of Fourier series.

Six credit hours.

MATHEMATICS 181, 182.**Mathematical Logic.**

Several systems of pure logic and applied logic will be discussed within a general framework which consists of three basic aspects of symbolic languages: grammatic construction, interpretations and deductive systems. The major results relative to completeness, incompleteness and decidability will be considered within this framework.

Six credit hours.

MATHEMATICS 201, 202.**Honors Seminar.**

The chief aim of the mathematics seminar is to provide an opportunity for individual and group investigation of topics not covered in course work by the mathematics majors. The method employed is active participation on the part of the students. The subject matter varies to suit individual students and is often related to the research activity of the professor. In 1968-69 there were individuals and small groups carrying on such independent study in the areas of algebraic geometry, Lie groups, functional analysis, linear analysis and probability theory.

Six credit hours.

DEPARTMENT OF

Modern Languages and Literatures

Professors: Bowen, Desautels, S. E. Flynn, McNerney

Associate Professor: McKenna

Assistant Professors: Baker, Fraser, Hartwig, Kopp, Lamoureux (Chairman), Vincens, Zwiebel

Instructors: J. D. Anderson, Baeppler, Baumgardner, Cuan, Foster, Garcia-Diez, T. Kennedy, Klein, Neikirk, Patruno, Sorokin

The courses offered by the Department of Modern Languages and Literatures are intended to contribute to the student's intellectual and aesthetic development through the study of foreign languages, literatures and cultures.

The foreign language requirement of the college is met by completion of two semester courses on the intermediate level or above.

Major programs, consisting of eight semester courses beyond the intermediate level, are offered in French, German, Italian, Russian and Spanish. The specific curriculum of each student will be arranged under the direction of the chairman. Students are urged to enrich their program by taking additional courses in their major language and in allied fields.

The Junior Year Abroad in Paris, Vienna, Freiburg, Madrid or Rome is open to qualified students.

The language laboratory offers to the student facilities for drills and exercises, as well as for listening to literary and cultural material, all appropriately coordinated with classroom work in the various courses.

Credit for the first semester in the following courses will not be given unless the second semester is also completed: Modern Languages 9, 11, 21.

FRENCH

FRENCH 9, 10.

French for Reading Knowledge.

An intensive elementary course for students desiring a reading knowledge of French for graduate studies. This course will not be applied to modern language requirements.

Six credit hours.

FRENCH 11, 12.

Elementary French.

The aim of this course is the acquisition of a basic speaking, reading, and writing knowledge of idiomatic French. Three hours weekly; laboratory practice.

Six credit hours.

FRENCH 21, 22.

Intermediate French.

A review of the fundamentals of the language supplemented by reading of literature and cultural material and by practice in oral expression. Three hours weekly; laboratory practice. *Six credit hours.*

FRENCH 127, 128.

Masterpieces of French Literature.

The aim of this course is to acquaint the student with works representative of the most significant currents in French Literature from the Middle Ages to the Twentieth Century. (This course is primarily for freshmen.) *Six credit hours.*

FRENCH 131, 132.

French Composition and Conversation.

The purpose of this course is to enable the student to achieve fluency in oral and written expression. *Six credit hours.*

FRENCH 133, 134.

Survey of French Literature.

The masters of French Literature in a comprehensive survey. *Six credit hours.*

FRENCH 137, 138.

French Culture and Civilization.

The intellectual, aesthetic and social development of France from medieval to contemporary periods, as a background for the study of the literary evolution. *Six credit hours.*

FRENCH 141.

French Literature of the Middle Ages.

An introduction to epic and lyric poetry, as well as to significant prose works. *Three credit hours.*

FRENCH 142.

The Sixteenth Century.

A study of major writers of this period: Rabelais, Montaigne, the Pleiade, etc. *Three credit hours.*

FRENCH 151.

Seventeenth Century: Literature of the Pre-Classical Period (1600-1660).

Malherbe, Descartes, Corneille, Pascal, etc. *Three credit hours.*

FRENCH 152.

Seventeenth Century: Literature of the Classical Period (1660-1700).

La Fontaine, Racine, Molière, Boileau, La Bruyère, etc. *Three credit hours.*

FRENCH 161, 162.

French Thought from Rationalism to Romanticism.

Six credit hours.

FRENCH 163, 164.

The Age of Enlightenment.

A study of selected works of Montesquieu, Diderot, Voltaire, Rousseau, etc. *Three credit hours.*

FRENCH 166.

Voltaire and his Time.

Three credit hours.

FRENCH 171.

A History of Romanticism.

The readings in this course treat those authors whose works reveal the awakening of the romantic spirit in France as well as those authors who are directly associated with the romantic movement. *Three credit hours.*

FRENCH 172.

The Nineteenth Century Novel.

This course studies selected novelists of the nineteenth century, whose literary values place them above and beyond restricted schools. *Three credit hours.*

FRENCH 173.

Nineteenth Century Poetry.

A study of the major poetic movements of the nineteenth century.

Three credit hours.

FRENCH 181.

The Theater in the Twentieth Century.

The major trends in the theater of this century are considered. The reading begins with the important plays at the turn of the century and continues to the present period. *Three credit hours.*

FRENCH 182.

The Novel in the Twentieth Century.

This course offers a selection of novelists, representative of predominant literary trends, from Gide and Proust to the "nouveau roman." *Three credit hours.*

FRENCH 187.

The Existential Novel (87).

Three credit hours.

FRENCH 191.

Practical French Phonetics.

French pronunciation, diction and intonation in theory and practice. Corrective exercises, recordings for the analysis of individual pronunciation problems. Poetry and prose studied in phonetic transcription using the International Phonetic Alphabet, extemporaneous speaking and prepared readings. *Three credit hours.*

FRENCH 193.

History of the French Language.

A survey of the development of the French language from earliest times to the present. *Three credit hours.*

FRENCH 195.

Existentialism in the French Novel and Drama.

The course purports to evaluate the rise and development of French existentialism in the theater and novel of the 1940's and 1950's, and involving Malraux, Sartre, Camus, Simone de Beauvoir, etc. *Three credit hours.*

FRENCH 231, 232.

Seminar in Advanced Conversation and Oral Stylistics.

A course designed to increase the fluency, correctness and effectiveness of the student's oral French. Prerequisite: French 131, 132, or equivalent. *Six credit hours.*

FRENCH 291, 292.

Junior Year Tutorial.

Eligible juniors concentrating in French may elect French 291-92 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures. *Six credit hours.*

FRENCH 293, 294.

Senior Year Tutorial.

Eligible seniors concentrating in French may elect French 293-94 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures. *Six credit hours.*

GERMAN

GERMAN 9, 10.

German for Reading Knowledge.

An intensive elementary course for students desiring a reading knowledge of German for graduate studies. This course will not be applied to modern language requirements. *Six credit hours.*

GERMAN 11, 12.

Elementary German.

The aim of this course is the acquisition of a basic speaking, reading, and writing knowledge of German. Three hours weekly, laboratory practice. *Six credit hours.*

GERMAN 21, 22.

Intermediate German.

A review of the fundamentals of the language, supplemented by readings in literary and cultural texts and by practice in oral expression. Prerequisite: German 11-12 or equivalent. Three hours weekly; laboratory practice. *Six credit hours.*

GERMAN 131.

Introduction to German Culture and Civilization: From the Beginning to the Baroque Period.

An intensive study through German texts of the cultural and historical background of the German-speaking peoples. Prerequisite: German 22, or its equivalent. *Three credit hours.*

GERMAN 132.

Introduction to German Culture and Civilization: From the Age of Enlightenment to the Present.

An intensive study through German texts of the cultural and historical background of the German speaking peoples. Prerequisite: German 22, or its equivalent. *Three credit hours.*

GERMAN 133, 134.

German Composition and Conversation.

The aim of this course is the acquisition of a facility in both oral and written expression. Special emphasis is given to idioms and style. Weekly papers of some length are required. *Six credit hours.*

GERMAN 135.

Survey of German Literature: From the Beginning to 1750.

This course presents a general survey of the development of German literature through lectures, accompanied by selected illustrative readings. *Three credit hours.*

GERMAN 136.

Survey of German Literature: From 1750 to the Present.

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Three credit hours.

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An intensive study through German texts of the cultural and historical background of the German-speaking peoples. Prerequisite: German 22, or its equivalent. *Three credit hours.*

GERMAN 132.

Introduction to German Culture and Civilization: From the Age of Enlightenment to the Present.

An intensive study through German texts of the cultural and historical background of the German speaking peoples. Prerequisite: German 22, or its equivalent. *Three credit hours.*

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This course presents a general survey of the development of German literature through lectures, accompanied by selected illustrative readings. *Three credit hours.*

GERMAN 136.

Survey of German Literature: From 1750 to the Present.

This course presents a general survey of the development of German literature through lectures, accompanied by selected illustrative readings. *Three credit hours.*

GERMAN 137.

German Lyric Poetry.

A study of lyric poetry from the medieval period to Klopstock. Emphasis is given to major lyricists, such as Walter von der Vogelweide, Gryphius, Christian Günther, Klopstock, and others. *Three credit hours.*

GERMAN 138.

German Lyric Poetry.

A study of lyric poetry from Klopstock to Werfel. Emphasis is given to major lyricists, such as Matthias Claudius, Goethe, Schiller, Hölderlin, Brentano, Eichendorff, Heine, George, Rilke, Werfel, and others. *Three credit hours.*

GERMAN 162.

Schiller: Life and Works.

A study of Schiller's life and works. Extensive reading and analysis of his main dramas. *Three credit hours.*

GERMAN 163.

Goethe: Life and Works.

A study of Goethe as the dominating figure of German Classicism. His influence upon, and status in world literature. Extensive readings from his works. *Three credit hours.*

GERMAN 165.

The German Drama of the 18th Century.

A study of the German drama in the period of Enlightenment, Storm and Stress, and Classicism. Readings of selected works from such writers as Lessing, Goethe, Lenz, Schiller, and others. *Three credit hours.*

GERMAN 166.

The German Drama of the 19th Century.

A study of the German drama in the period of Romanticism and Realism. Readings of selected works from such writers as Kleist, Werner, Grillparzer, Hebbel, Ludwig, and others. *Three credit hours.*

GERMAN 171.

The Age of German Idealism before Immanuel Kant.

A study of German literature and thought in the 18th century before Immanuel Kant. Readings of selected works from such writers as Klopstock, Lessing, Wieland, Herder, Goethe, and others. *Three credit hours.*

GERMAN 172.

The Age of German Idealism in the Post-Kantian Period.

A study of German literature and thought in the Post-Kantian and Romantic Periods. Readings of selected works from such writers and thinkers as Kant, Schiller, Schlegel, Schelling, Schleiermacher, and others. *Three credit hours.*

GERMAN 173.

The German Novelle of Classicism and Romanticism.

The study of the Novelle as a genre, its history, and foreign influences upon its development. Readings of selected works from such writers as Goethe, Kleist, Hoffman, Tieck, Eichendorff, and others. *Three credit hours.*

GERMAN 174.

The German Novelle of the 19th and 20th Centuries.

A study of the German Novelle of Realism and Surrealism. Readings of selected works from such writers as Stifter, Keller, Meyer, Hauptmann, T. Mann, Kafka, Brecht, and others. *Three credit hours.*

GERMAN 175.

German Romanticism.

The place of German Romanticism in European literature. Romanticism as a literary attitude, a philosophical position, and a school. Readings in Schlegel, Novalis, Brentano, Tieck, Hoffman, Eichendorff, and others. *Three credit hours.*

GERMAN 181.

Modern German Prose before World War I.

A study of the prose writings of leading early 20th century authors. Emphasis is given to works of Hauptmann, Schnitzler, the young T. Mann, and others.

Three credit hours.

GERMAN 182.

Modern German Prose After World War I.

A study of the prose writings of leading Post-World War I writers. Emphasis is given to works of Hesse, T. Mann, Döblin, Kafka, Böll, Grass, and others.

Three credit hours.

GERMAN 183.

Modern German Drama before World War I.

A study of the chief trends in 20th century German drama from Naturalism to World War I. Emphasis is given to the works of Hauptmann, Schnitzler, Wedekind, Kaiser, and others.

Three credit hours.

GERMAN 184.

Modern German Drama after World War I.

A study of the chief trends in German drama in the Post-Expressionistic period. Emphasis is given to the works of Zuckmayer, Brecht, Frisch, Dürrenmatt, and others.

Three credit hours.

GERMAN 291, 292.

Junior Year Tutorial.

Eligible juniors concentrating on German may elect German 291, 292 for a full year course. Those wishing to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures.

Six credit hours.

GERMAN 293, 294.

Senior Year Tutorial.

Eligible seniors concentrating on German may elect German 293-294 for a full year course. Those wishing to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literature.

Six credit hours.

ITALIAN

ITALIAN 11, 12.

Elementary Italian.

An intensive introduction to the elements of the Italian language, with the emphasis on oral and aural proficiency.

Six credit hours.

ITALIAN 21, 22.

Intermediate Italian.

This course is for students who have successfully completed a basic course in the language. Literary emphasis is on the shorter works of Twentieth Century prose writers.

Six credit hours.

ITALIAN 131, 132.

Italian Composition and Expression.

This course is intended to perfect the speaking ability of the Italian student. There is emphasis, too, on the quality of the fine Italian sentence.

Six credit hours.

ITALIAN 133, 134.**Survey of Italian Literature.**

The history of the literature of Italy, with selected readings.

Six credit hours.

ITALIAN 135, 136.**Literary and Political Italy in the 19th Century.**

Italy in the nineteenth century as a background for the reading of Manzoni's "Promessi Sposi."

Six credit hours.

ITALIAN 151, 152.**Twentieth Century Italian Prose.**

The literature of modern Italy.

Six credit hours.

ITALIAN 153, 154.**Dante, Petrarca, and Boccaccio.**

Three masters of Italian literature.

Six credit hours.

ITALIAN 161, 162.**Special Topics in Italian Studies.**

This course is reserved for Italian majors and special arrangements must be made with the professor.

Six credit hours.

ITALIAN 291, 292.**Junior Year Tutorial.**

Eligible juniors concentrating in Italian may elect Italian 291, 292 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures.

Six credit hours.

ITALIAN 293, 294.**Senior Year Tutorial.**

Eligible seniors concentrating in Italian may elect Italian 293, 294 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures.

Six credit hours.

Further advanced courses to be arranged for majors or other students interested in advanced work in Italian.

LINGUISTICS**LINGUISTICS 119, 120.****Seminar in Language.**

An introductory survey course dealing with the definition, history and scientific description of human language, the development of linguistics research, and recent linguistic trends and theories.

Six credit hours.

RUSSIAN**RUSSIAN 11, 12.****Elementary Russian.**

The aim of this course is the acquisition of a basic speaking, reading, and writing knowledge of idiomatic Russian. Three hours weekly, laboratory practice.

Six credit hours.

RUSSIAN 21, 22.**Intermediate Russian.**

A continuation of Russian 11, 12 with added emphasis on acquiring oral fluency in contemporary Russian. Three hours weekly, laboratory practice.

Six credit hours.

RUSSIAN 131, 132.

Russian Composition and Conversation.

A course devoted to achieving the dual skills of conversational and compositional fluency in contemporary Russian. Texts include Russian fiction, technical texts and newspapers. The course is conducted entirely in Russian. *Six credit hours.*

RUSSIAN 171, 172.

Golden Age of Russian Literature.

Study of the prose of Russian 19th century literature. Representative readings from the works of Pushkin, Gogol, Turgenev, Dostoevski, Tolstoy, Chekhov and others. Special emphasis is on the transitions between succeeding esthetic literary movements: neo-classicism, romanticism, and realism. Readings, lectures and papers are in English with special discussion sections for those proficient in Russian. *Six credit hours.*

RUSSIAN 175.

Decadent Literature in Late 19th Century Russian.

In translation. A study of Russian letters in the period from the 1800's to 1910, which is considered the decline of Russian prose after the golden age of Tolstoy and Dostoevsky, and which shows various characteristics of the so called "modernism" such as Chekhov, Andreev, Artzybashev, Gorby, Kuprin, Sologub, Bunin, and two or three other novelists. Some emphasis is placed on the study of deterioration of the novel as a literary form. *Three credit hours.*

RUSSIAN 181, 182.

Soviet Literature.

The evolution of Russian Literature in the Soviet period. Representative authors include Gorki, Babel, Mayakovsky, Sholokhov, Olesha, Pasternak, and others. The course also includes conflicts in critical interpretations of literature, e.g., Marxism and Formalism. Readings, lectures and papers are in English with special discussion sections for those proficient in Russian. *Six credit hours.*

RUSSIAN 291, 292.

Junior Year Tutorial.

Eligible juniors concentrating in Russian may elect Russian 291, 292 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures. *Six credit hours.*

RUSSIAN 293, 294.

Senior Year Tutorial.

Eligible seniors concentrating in Russian may elect Russian 293-294 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures. *Six credit hours.*

SPANISH

SPANISH 11, 12.

Elementary Spanish.

An introduction to the language and culture of the Hispanic World. *Six credit hours.*

SPANISH 21, 22.

Intermediate Spanish.

Hispanic language, literature and culture for students who have had a basic course (or courses) in the language. *Six credit hours.*

SPANISH 119, 120.

Advanced Spanish.

This course is intended for those who have successfully completed an intermediate course but who desire advanced work in oral and written Spanish. Readings are from a selected anthology of an advanced nature. *Six credit hours.*

SPANISH 131, 132.

Spanish Composition and Expression.

Situation experience in the oral and written aspects of the language for students who have progressed beyond the intermediate level. *Six credit hours.*

SPANISH 133, 134.

Survey of Spanish Literature.

The literature of the Iberian Peninsula across the centuries. *Six credit hours.*

SPANISH 135, 136.

Survey of Spanish American Literature.

Panoramic view of the literature of the Spanish speaking people of the New World. *Six credit hours.*

SPANISH 153, 154.

Cervantes and the Theater of the Golden Age.

Intensive study of the novels of Cervantes and some works of the outstanding dramatists of this period. *Six credit hours.*

SPANISH 171, 172.

Nineteenth Century Novel.

A study of representative works of the outstanding novelists of this century.

Six credit hours.

SPANISH 173, 174.

Modern Spanish Theater.

Spanish drama of the nineteenth and twentieth centuries.

Six credit hours.

SPANISH 181, 182.

Twentieth Century Novel and Essay.

A study of representative works of the outstanding novelists and essayists of this century. *Six credit hours.*

SPANISH 291, 292.

Junior Year Tutorial.

Eligible juniors concentrating in Spanish may elect 291, 292 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures. *Six credit hours.*

SPANISH 293, 294.

Senior Year Tutorial.

Eligible seniors concentrating in Spanish may elect Spanish 293, 294 for a full year course. Those who wish to enroll must obtain permission from the Chairman of the Department of Modern Languages and Literatures. *Six credit hours.*

DEPARTMENT OF

Naval Science

Professor: Hayes (Chairman)

Associate Professor: Orcutt (Executive Officer)

Assistant Professors: Ferrier, LaGregs, McGarity, Schmid

The Department of Naval Science, a recognized department of instruction within the College, has as its purpose the providing of instruction in professional subjects dealing with the Navy and Marine Corps which, when added to the other academic instruction provided by the College, will meet the purpose for which the Naval Reserve Officers Training Corps was established.

The Naval Reserve Officers Training Corps consists of the NROTC Units at fifty-four colleges and universities throughout the United States. Its purpose is to provide a steady supply of well educated junior officers for the Navy and Marine Corps, and to build up a reserve of trained officers who will be ready to serve the country at a moment's notice in a national emergency. Students enrolled in the NROTC are of two categories, Regular and Contract. All procedures, benefits and requirements described hereinafter apply to both categories of NROTC students unless specifically indicated as pertaining to only one.

MILITARY STATUS

NROTC students wear the uniform only on such occasions as prescribed by the Professor of Naval Science. Normally, this will be at drills, ceremonies, and on cruises. In addition to observing the ordinary requirements of gentlemanly conduct, the NROTC students are subject to naval discipline and must conduct themselves at all times in a military manner when under naval jurisdiction, that is, when attending naval science classes, drills and exercises, and during summer training periods.

With the exception of the above described instances, NROTC students are in the same category as other students of the College.

STATUS ON GRADUATION

Contract students: After completion of their academic requirements for a baccalaureate degree and the four years of Naval requirements, which include the summer training, contract students are commissioned as ensigns in the United States Naval Reserve or second lieutenants in the United States Marine Corps Reserve, and are required to serve three years active duty unless deferred by the Navy Department for graduate study.

Regular students: Upon graduation, regular students are commissioned as ensigns in the United States Navy or second lieutenants in the United States Marine Corps. They are normally required to serve on active duty for a period of four years. Their seniority as Regular Navy ensigns or Regular Marine Corps second lieutenants is integrated with the Naval Academy Class of their graduating year. As Regulars, they do not need to request to remain on active duty.

SUMMER TRAINING

Regular students: All regular students are required to take two summer cruises and one summer period of aviation-amphibious indoctrination, usually of eight weeks' duration each. The cruises are made on board modern warships. The aviation indoctrination is usually conducted at Corpus Christi, Texas, and the amphibious indoctrination is usually conducted at Little Creek, Virginia.

Contract Students: Contract students are required to take one summer period of aviation-amphibious indoctrination between their sophomore and junior years and a shipboard cruise between their junior and senior years. These summer training periods are usually of six weeks duration.

For both regular and contract students, travel expenses from the College to the summer training site and back are furnished by the government. In addition, all students receive active duty pay during summer training.

EMOLUMENTS

Regular students: For regular students the cost of tuition, fees, and textbooks is paid by the government. Necessary uniforms are provided and students receive retainer pay at the rate of \$600 per year.

Contract students: Contract students receive no emoluments during the first two years in the program. During the last two years they receive a subsistence allowance of \$50.00 a month. They are issued the necessary uniforms and Naval Science textbooks at no expense.

ELIGIBILITY REQUIREMENTS

A candidate for the NROTC must:

1. Be a male citizen of the United States.
2. At the time of his enrollment, if a minor, have the consent of his parent or guardian.
3. Be not less than seventeen nor more than twenty-one years of age on July 1 of the year in which he enters the program. (Contract students may be enrolled if sixteen years of age on July 1 of the year in which they enter the program.)

4. Gain his own admittance to the College.
5. Agree, if he is a regular student, to remain unmarried until commissioned.
6. Be physically qualified, in accordance with the requirements for the U.S. Naval Academy, except that the vision requirements for contract students are 20/100 each eye, corrected by lenses to 20/20 (one eye can be 20/400 if the other is not lower than 20/70); and for regular students 20/40 each eye, correctible to 20/20, is permissible, if the student scores in the highest 10% in the national examination. The visual acuity requirement, in the absence of placing in the top 10 percentile for regular program candidates, is 20/20 vision.
7. Sign an agreement, if he is a contract student, to accept a commission, if tendered, as an ensign, U.S. Naval Reserve, or second lieutenant, U.S. Marine Corps Reserve, and serve three years on active duty upon completion of college training, if called by the Secretary of the Navy.
8. Sign an agreement, if he is a regular student, to accept a commission, if tendered, to retain this commission for a period of six years, and to serve not less than four years on active duty as an officer, if called by the Secretary of the Navy.

SPECIAL PROCEDURES

Contract students are enrolled by the Professor of Naval Science upon their own application and are subject to selection and physical examination at the College within a limited quota as assigned by the Navy Department. These students are taken primarily from the entering freshman class at the beginning of the fall semester.

Inasmuch as the selection of contract students is completed during the first week of the fall semester and in view of the fact that the contract quota is limited, all eligible students who desire to be considered for the NROTC program should apply prior to the first day of classes in the fall. An application is not binding, and, even after enrollment in the program, a contract student may withdraw from the program, without prejudice, upon his own request at any time within the first two years.

At the beginning of the junior year the contract student must execute an enlistment contract as a seaman in the Naval Reserve for a period of six years. This contract is automatically terminated upon his appointment to commissioned rank at graduation.

Regular students enter the NROTC through a nation-wide test and selection system. The competitive examination is conducted in the late fall of the year, approximately nine months before enrollment of the applicant.

Contract NROTC students may transfer from contract to regular status by competing for regular status. If selected they will be enrolled as regular students without loss of standing.

THE NAVAL SCIENCE STUDENT

Disqualified NROTC applicants may take the Naval Science course for the purpose of acquiring advanced standing to be used when applying for NROTC enrollment at a later date in the event of removal of the disqualification. Also, the Naval Science course may be taken by those students who have no interest in NROTC enrollment, but who wish the instruction. Students in either of the above categories are known as Naval Science Students.

Naval Science students receive credit for satisfactory completion of the Naval Science course, but have no official status in the NROTC Program, and receive none of the advantages of the regular and contract NROTC students other than the training and background gained. This training would prove to be beneficial should the graduated Naval Science student apply for a commission through sources normally available to college graduates other than the NROTC Program.

DRAFT DEFERMENT

A student enrolled in the Naval ROTC will be deferred from the draft (Selective Service of 1948 and Universal Military Training Act of 1951) if he satisfactorily pursues the Naval ROTC course for four full years, including the summer training period applicable to his status as contract or regular student.

A contract student who is disenrolled prior to the start of his junior year in the NROTC will revert to the draft status of other college students not members of an ROTC Unit. After the start of his junior NROTC year and the receipt of the subsistence allowance, a disenrolled contract student may, at the discretion of the Chief of Naval Personnel, be ordered to two years of active duty in an enlisted status.

A regular student who is disenrolled prior to the start of his junior NROTC year will revert to the draft status of other college students not members of an ROTC Unit. After commencement of his junior year, a disenrolled regular student may, at the discretion of the Chief of Naval Personnel, be ordered to active duty in an enlisted status.

CURRICULA

General: In order to obtain a commission either in the U.S. Navy, U.S. Naval Reserve, U.S. Marine Corps, or U.S. Marine Corps Reserve, students are required to obtain a baccalaureate degree and complete twenty-four semester hours in the Department of Naval Science. During each semester every NROTC student is required to attend one two-hour laboratory period each week.

Two separate curricula in naval science subjects are offered in the junior and senior years. One provides for the continued education of prospective Naval Officers, while the other prepares those who elect to be Marine Officers in Marine oriented subjects.

The following courses may not be taken by a regular student: premedical, pre dental, and pretheological. A contract student may take such courses but it is to be remembered that all NROTC graduates usually go on immediate active duty upon graduation, and so additional training for one of those professions will be delayed until completion of the period of obligated naval service.

REQUIREMENTS OTHER THAN NAVAL SCIENCE COURSES

All NROTC students are required to complete one year of mathematics and one semester of computer science prior to the end of their junior year.

All NROTC students are required to complete one year of physics or chemistry prior to the end of their junior year. Biological earth sciences may be substituted only with prior approval of the professor of Naval Science.

NAVAL SCIENCE 11.

Sea Power and Orientation.

A study of the Department of Defense, the basic customs and traditions of the Navy, the present-day Navy and the student's part in it. *Three credit hours.*

NAVAL SCIENCE 12.

Sea Power and Orientation.

A study of the influence of Sea Power upon global history. The stimulation of a living interest in the Navy and an appreciation of the contributions of Sea Power to the past, present, and future progress of the United States. *Three credit hours.*

NAVAL SCIENCE 21.

Weapons.

A study of the fundamentals of naval weapons and weapons systems, stressing basic principles and their application to the control of the seas. The following major areas are covered: basic weapons delivery problems, basic sciences, basic gunnery, typical fire control systems, anti-submarine warfare, guided missiles, nuclear weapons, space technology and the employment of naval weapons; a realistic and practical coverage of the duties of a Gunnery Department officer including specific problems and solution, responsibilities, and authority. *Three credit hours.*

(Not offered 1969-70)

NAVAL SCIENCE 22.

General Psychology (Psychology 41).

Factors influencing human behavior are discussed under topics which include: development, maturation, learning, motivation, and perception. A study of psychological assessment, personality, and unusual behavior will introduce the student to complex issues involved in individual performance. *Three credit hours.*

NAVAL SCIENCE 41, 42.

Navigation and Naval Operations.

A comprehensive study of the theory, principles and procedures of ship navigation, movements and employment. Course includes spherical trigonometry, mathematical analysis, study and practices, spherical triangulation, sights, sextants and publications and report logs. Tactical formations and dispositions, relative motion, maneuvering board, tactical plots are analyzed for force effectiveness and unity. Rules of the road, lights, signals and navigational aids including inertial systems. A navigation practice laboratory of 15 hours each semester is included.

Six credit hours.

NAVAL SCIENCE 51.

Naval Engineering.

A study of basic naval engineering, including main propulsion steam plants, diesel engines, and ship stability. *Three credit hours.*

NAVAL SCIENCE 52.

Contemporary Issues in Naval Leadership.

Through lecture, directed reading, and discussion the student is led to reflect on the leadership and administrative responsibilities of today's Naval Officer. Particular emphasis is attached to those principles and problems of leadership associated with the students' expanding responsibilities as Naval Officers. General topics to be discussed include: the Origins of Military Law, the Naval Judicial System, Motivation, The Philosophy of Discipline, Leadership, Authority and Responsibility, Individuality and Military Life, Morale, Group Dynamics Applied to the Military Situation, and the Characteristics of Efficient Administrative Systems. In addition, seminars or guest lecturers concerned with subjects and issues of interest to the students attending are presented. *Three credit hours.*

MARINE CORPS

Candidates for commission in the Marine Corps will be required to complete NS11, 12, 21, and 22. In place of NS41, 42, 51, and 52, they will take courses in Marine Corps subjects as follows:

NAVAL SCIENCE 45.

Evolution of the Art of War.

An historical study of the evolution of warfare including: principles of war, offensive combat, defensive combat, and studies of warfare in specific eras. *Three credit hours.*

NAVAL SCIENCE 46.

Evolution of the Art of War and Modern Basic Strategy and Tactics.

A continuation of the historical study of the evolution of warfare developing into a treatment of modern basic strategy and tactics. *Three credit hours.*

NAVAL SCIENCE 55.

Amphibious Warfare, Part I.

A study of the development of amphibious warfare operations and their employment in World War II. *Three credit hours.*

NAVAL SCIENCE 56.

Amphibious Warfare, Part II.

Leadership, and the Uniform Code of Military Justice.

A continuation of the study of amphibious warfare concentrating on such tactics, equipment, and modern methods of employment. A study of the general responsibilities the student must assume when commissioned, in the fields of leadership, discipline, and naval justice. *Three credit hours.*

DEPARTMENT OF

Philosophy

Professors: Haran, J. Shea

Associate Professors: Harrington, Lynch (Chairman), Pax

Assistant Professors: Cahalan, F. Callahan, Cloeren, Dilanni, Herx

Instructors: Dewing, Jeffko, Struyker Boudier

The Department of Philosophy discharges a two-fold function, one to the entire College, the other to its majors. The purpose of the first is the bringing of all students to a true understanding of total experience and of the meaning of their lives as well as to conviction through an analytic and reflective study, commencing in freshman year, of the best in historical and contemporary thought relating to Philosophy of Man, Metaphysics and Ethics (junior year). This program is conceived and executed in accord with the values and goals of a liberal arts education and is designed to accent Christian contributions wherever philosophically valid and appropriate.

The major program is structured to serve the needs and interests of students who will pursue graduate studies in philosophy and is open to those who plan careers in, for example, medicine or law. All majors should study a full year of college mathematics and all must take a year's course in either Greek Classics or Greek Classics-in-Translation and a year of Behavioral Science. The minimum philosophy requirement for the major is ten semester courses in philosophy—which must include a semester of mathematical logic, two historical courses and at least two 100-level courses.

The Department offers a wide range of specialized courses, seminars and tutorials for its majors. Student-faculty community is deepened through informal conversation amidst the comfortable appointments and reflective atmosphere of a Common Room.

BASIC COURSES

PHILOSOPHY 11.

Philosophy of Man.

Through directed reading and dialogue, the student is led to reflect upon human experience, both personal and historical, and to seek therein a true understanding of man's nature, especially his freedom, spirituality, and unity. *Three credit hours.*

PHILOSOPHY 21.

Metaphysics.

This course is an experience-grounded analysis of the real in which its structure, first principles, and concrete realizations, with emphasis on the person and community, is discovered and studied. The investigation moves to a rational inquiry into the existence and character of the ultimate origin and purpose of real being.

Three credit hours.

PHILOSOPHY 31.

Ethics.

The course in Ethics makes explicit and meaningful the moral dimension of human experience. The distinctive character of moral experience is studied both in practical situations and in its foundations. The person as agent is studied in himself and in relation to the community, with attention given to the issues of authority and the religious capacity of man. The method and approach to the topic varies with the individual instructor.

Three credit hours.

HISTORICAL COURSES

PHILOSOPHY 51.

Ancient Philosophy.

A careful study of the main contributions of the ancient Greek philosophers to the western tradition. The student will be acquainted with the central problems of early Greek civilization and will then examine the efforts of Socrates, Plato and Aristotle to meet these problems. The central focus of the work of the course will be the reading of many of the works of Plato and Aristotle.

Three credit hours.

PHILOSOPHY 61.

Medieval Philosophy.

A study of medieval thought from Augustine to Meister Eckhart, with special emphasis on Boethius, Pseudo-Dionysius, Eriugena, St. Anselm, St. Bonaventure, St. Thomas, Meister Eckhart. Also, an analysis of the philosophical movement in the thirteenth century.

Three credit hours.

PHILOSOPHY 71.

Modern Philosophy I.

This course will consider the thought of Descartes, Spinoza, Leibniz and Christian Wolff. An effort will be made to study the growth, implications and value of European Rationalism and the great British tradition of Locke, Berkeley and Hume. Finally, attention will be given to Kant's attempt to reconcile the conflicting tendencies of modern thought.

Three credit hours.

PHILOSOPHY 72.

Modern Philosophy II.

This course will study selected but significant thinkers of the nineteenth and twentieth centuries: Hegel, Schopenhauer, Nietzsche, Bergson and Whitehead. An attempt will be made to assess the influence of Romanticism, Irrationalism, Life-Philosophy and Relativity on the thought of the present day.

Three credit hours.

PHILOSOPHY 81.

British Empiricism.

An historical and critical survey of the philosophies of Locke and Hume based principally on Locke's *Essay concerning Human Understanding* and Hume's *A Treatise of Human Nature*. Attention will also be given to Berkeley and the place of British Empiricism in the history of modern thought.

Three credit hours.

PHILOSOPHY 91.

American Philosophy.

A study of some of the leading thinkers in 19th and 20th century America, including Royce, Santayana, Peirce, James, and Dewey, with special stress on the original works of these men.

Three credit hours.

PHILOSOPHY 95.

Contemporary Philosophy.

A survey of the outstanding philosophical thinkers of the late 19th and 20th centuries, including Bergson, James, Dewey, Whitehead, Russell, Jaspers, Sartre, and Marcel.

Three credit hours.

PHILOSOPHERS

PHILOSOPHY 105.

Plato.

His life; influence of Socrates. Founding of the Academy and its spirit. An analytical study of selected dialogues.

Three credit hours.

PHILOSOPHY 110.

St. Thomas.

The life and literary activity of St. Thomas Aquinas. A study of source materials with a view of drawing out both his basic concepts and their relevance to the contemporary philosophical scene.

Three credit hours.

PHILOSOPHY 115.

Kant.

A reading course in the primary sources, concentrating on the first and second *Critiques*; the relationship between these two works and their setting in the whole Kantian effort. The meaning of *reason* and the primacy of the practical use of reason. The influence of Kant on later philosophical writers.

Three credit hours.

CONTEMPORARY MOVEMENTS AND QUESTIONS

PHILOSOPHY 121.

Phenomenological Existentialism.

An examination of the origins and bases of the contemporary phenomenological movement. The growth of existentialism from phenomenology. The theistic and atheistic strands of the movement. Current influences of existentialism in the areas of psychology, sociology and religious thought.

Three credit hours.

PHILOSOPHY 123.

Analytic Philosophy.

A study of the origins and aims of this contemporary movement, through an examination of the principal works of its founders and contributors, with stress on a critical appraisal of its presuppositions, value and limitations.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 125.

Existential Marxism.

A critical analysis of Marxism from the view point of Existentialism. In particular the course will concentrate on the notions of individual freedom in Existentialism and social responsibility in Marxism.

Three credit hours.

PHILOSOPHY 127.

Language, Myth and Thought.

An attempt through a study of language to gain insight into the nature of the complex inter-relationships which exist between intuition, thought and language. Readings will be selected from the works of Heidegger, Wittgenstein, Merleau-Ponty, Cassirer, and James.

Three credit hours.

PHILOSOPHY 130.

Contemporary Atheism.

A phenomenological and historical analysis of the nature and origins of the contemporary attitude toward God. Readings will be taken from Hegel, Feuerbach, Marx, Nietzsche and the Death of God Thinkers. *Three credit hours.*

PHILOSOPHY 131.

Medical Ethics.

A discussion of medical-moral problems. *Three credit hours.*

PHILOSOPHY 141.

Faith and Reason.

A critical examination of religious faith and natural reason as two distinctive ways of knowing, and a consideration of relationships which may exist between these kinds of knowledge, viewed in the light of traditional and contemporary positions. *Three credit hours.*

PHILOSOPHY 151.

Introduction to the Sociological Way of Thinking.

The development of a theory of the sociological dimension of human life in general as well as a detailed analysis of the sociological dimension of moral life, religious life and economic life. *Three credit hours.*

(Not offered 1969-70)

PHILOSOPHY 152.

Masters of European Social Thought.

A study of a number of great European sociologists of the past (Durkheim, Simmel, Weber, Mannheim) and present (Gurwitch, Aron, Adorno, Schelsky).

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 153.

Talking About God.

The problem of God in the history of philosophical thinking. *Three credit hours.*

PHILOSOPHY 154.

God in Modern Literature.

Discussion and analysis growing out of authors such as Malraux, Camus, Sartre, Borchert, Böll, Brecht, Bernanos, Graham, Greene. *Three credit hours.*

SPECIALIZATIONS

PHILOSOPHY 161.

Mathematical Logic.

Equivalent to Math. 63.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 165.

Philosophical Method.

A study stressing the historiography of analytic philosophy from Locke to Wittgenstein and Austin dealing especially with such forerunners of linguistic analysis as Locke, Berkeley, Hamann, Litchtenberg, Reinhold, Humboldt, Gruppe.

Three credit hours.

PHILOSOPHY 171.

Philosophy of Knowledge.

A critical examination of the nature and value of human knowledge stressing the problems of the relation between thought and external reality, the limits of human knowledge, and knowledge as a kind of transcendence. Various kinds of knowledge will be distinguished and compared.

Three credit hours.

PHILOSOPHY 175.

Philosophy of History.

An analysis of the nature of history and the epistemological problems of historiography, and an evaluation of the demands of a speculative philosophy of history.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 176.

The Individual and Society.

A philosophical investigation into various designs of ideal societies (utopias) and a discussion of literary visions of man's future, ranging from ancient to contemporary authors, among them Plato, More, Bacon, Hobbes, Orwell, Huxley.

Three credit hours.

PHILOSOPHY 177.

Philosophy of Art.

A basic study of the functions of the human mind, senses, and emotions in the creation and appreciation of art, with special reference to poetry and the fine arts.

A review of some major works on aesthetics.

Three credit hours.

PHILOSOPHY 181.

Philosophy of Mathematics.

A critical examination of Logic and especially of the structure of contemporary mathematics, with emphasis on presuppositions, methodology, intelligibility and noetic character, along with some current philosophical orientations. Prerequisite: Math. 11, 12 or equivalent.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 183.

Philosophy of Science.

A study of the character of contemporary empirical science (especially physics), stressing presuppositions, methodology and noetic value. Mathematicized science and intelligibility. Foundation of model-theory in the behavioral and life sciences. Relation between philosophical enrichment arising from a mode of dependence upon empirical data and scientific theory and that from a properly philosophical confrontation with nature.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 185.

The Meaning of Sexuality.

A philosophical inquiry and examination of the person in his sexual meaning and relating. The study is grounded in an explicit intersubjective analysis of man and moral action and analyzes various types of love-experiences and fundamental orientations and attitudes. The moral perspective is brought to bear upon a variety of important and current questions and practices and this with regard to cultural influences and the growing awareness of the value and meaning of man. The course concludes with remarks on the conjugal experience, the celibate experience and the mystery-aspect of love.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 186.

The Basis and Structure of Authority.

A philosophical study of the basis of authority in its relation to human existence and human freedom, coupled with a phenomenological investigation of its structure, manifestations, and areas of operation.

Three credit hours.

PHILOSOPHY 191.

Philosophy of Religious Experience.

An examination of religious experience, precisely as religious experience. The nature of this experience; the conditions, epistemological and ontological, under which this experience is meaningful. Various approaches to the Divine Reality.

The meaning of God in human experience.

Three credit hours.

SEMINARS AND TUTORIALS

PHILOSOPHY 228.

Existential Approach to God.

An investigation and analysis of the approach to God in contemporary existential philosophy.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 280.

The Logic of Time.

A study of some of the most fundamental problems that stand in the way of a consistent theory of time.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 281.

Philosophy of Mathematics—Advanced Topics.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 283.

Philosophy of Science—Advanced Topics.

Examination and discussion of such matters as empirical and logical foundations and completeness of physical science, quantum theory, relativistic field theory, cosmology.

Three credit hours.

(Not offered 1969-70)

PHILOSOPHY 298, 299.

Special Topics I, II.

Tutorial work in subject matter which may vary to suit the needs and interests of the student.

Six credit hours.

DEPARTMENT OF

Physics

Professors: Gunter, Sarup, T. Smith

Associate Professors: Kaseta, Kennedy (Chairman), R. MacDonnell, Tangherlini

Assistant Professors: Li, Matous

The curriculum leading to the bachelor's degree in physics is designed to provide a thorough foundation in the principal branches of physics. With this background a student is well prepared for further study leading to advanced degrees in science and engineering as well as for many positions in research, business, teaching, and other fields.

Freshmen planning to major in physics are ordinarily enrolled in Physics I and II, an intensive year course in mechanics, thermal physics, wave motion, and electricity and magnetism, with liberal use of the calculus (taken concurrently in the Mathematics Department). Required courses for a major in physics are the following: Physics I and II (Ph. 23, 24) or General Physics (Ph. 21, 22); Physics III (Ph. 25); Optics (Ph. 115); Theoretical Mechanics (Ph. 120); Thermal Physics (Ph. 125); Electricity and Magnetism (Ph. 130); Electronics (Ph. 135); and Atomic Physics I and II (Ph. 141, 142) or Modern Physics I and II (Ph. 109, 110). In addition, the Department offers a variety of elective courses. Mathematics courses, through Advanced Calculus, are also required for the degree in physics.

A program of supervised research in theoretical or experimental physics is available to qualified physics majors. Research and student laboratory equipment include a 2 Mev positive ion Van de Graaff accelerator, a 512 channel pulse-height analyzer, a 60 foot diameter dish radio telescope, satellite tracking equipment, ultraviolet monochrometers, a precision refractometer, a large aperture Twyman-Green interferometer, crystal growing equipment, a 7 inch variable gap precision electromagnet, a 1.5 meter optical spectrograph, and a Cahn electrobalance.

PHYSICS 13.

General Physics.

Introduction to the basic concepts of physics (without calculus). Three lectures and one (two-hour) laboratory period. *Four credit hours.*

PHYSICS 14.

General Physics.

Continuation of Physics 13. Three lectures and one (two-hour) laboratory period. *Four credit hours.*

PHYSICS 21.

General Physics.

An introduction to the basic concepts of physics using calculus. Three lectures and one (two-hour) laboratory period. *Four credit hours.*

PHYSICS 22.

General Physics.

Continuation of Physics 21. Three lectures and one (two-hour) laboratory period. *Four credit hours.*

PHYSICS 23.

Physics I.

An intensive study of the basic principles of mechanics and selected topics in thermal physics, with liberal use of the calculus. Primarily for physics majors. Four lectures. *Four credit hours.*

PHYSICS 24.

Physics II.

Continuation of Physics 23. An intensive study of the basic principles of electricity and magnetism and selected topics in wave motion. Three lectures and one (three-hour) laboratory period. *Four credit hours.*

PHYSICS 25.

Physics III.

Continuation of Physics 24. Basic concepts in modern physics and optics. Three lectures and one (three-hour) laboratory period. *Four credit hours.*

PHYSICS 37.

Earth Science I.

Earth as a planet solar system, earth's magnetism, solar radiation and illumination of the earth's surface, atmospheric circulation, moisture, air masses, fronts and storms, ocean water and its circulation, world climates. Three lectures. Elective for non-science majors. *Three credit hours.*

PHYSICS 38.

Earth Science II.

Rocks and minerals, earth's interior, ocean basins and continents, methods of historical geology, ground water and geological work of streams, glacial, and shoreline landscapes, wind erosion. Three lectures. Prerequisite: Ph. 44. *Three credit hours.*

PHYSICS 39.

History and Philosophy of Science I.

A study of some of the major scientific theories from Democritus and the Greek Atomists to the present time with consideration of their impact on contemporary scientists and philosophers. The course will consider development of the scientific method and will examine the structure and validation of scientific theory. In the first semester the study will extend from the period of the Greeks to the development and acceptance of the heliocentric system. Elective for non-science majors. Three lectures. *Three credit hours.*

PHYSICS 40.**History and Philosophy of Science II.**

A continuation of Physics 39. A study will be made of major contributions to science from Copernicus to the present time with typical cases being Harvey in biology, Dalton in chemistry, and in physics special emphasis will be placed on relativity, the uncertainty principle, the wave-particle duality in nature, the question of reality and justification of the mental construct in the subatomic. Three lectures. Prerequisite: Physics 39. *Three credit hours.*

PHYSICS 41.**General Physics.**

Elective for non-science majors who have had no previous courses in physics. Topics are selected from the physical fields of mechanics, heat, sound, light, electricity, magnetism, atomic, nuclear, and astrophysics. Three lectures. *Three credit hours.*

PHYSICS 42.**General Physics.**

Continuation of Physics 41. Three lectures.

Three credit hours.

PHYSICS 49.**Introduction to Modern Physics I.**

Gravitational, electric and magnetic fields. Diffraction, interference and polarization of light. Atomic spectra. Atomic structure. Electro-magnetic radiations. Solid state. Relativity. Lasers. Electron optics. Elective for non-science majors who have had a general physics course. Three lectures. *Three credit hours.*

PHYSICS 50.**Introduction to Modern Physics II.**

Continuation of Physics 49. Radioactivity. Transmutation. Beta and gamma rays. Nuclear disintegration. Cosmic rays. Particle accelerators. Neutron and gamma ray reactions. Special atomic and nuclear effects. Fission and fusion. Nuclear energy. Elementary particles. Prerequisite: Ph. 49. Three lectures. *Three credit hours.*

PHYSICS 109.**Modern Physics I.**

Special relativity. Wave-particle dualities; atomic structure and spectra; x-rays. Particle detectors and accelerators. Nuclear structure and reactions. Molecular and solid state physics. Three lectures. Prerequisite: Ph. 21, 22 or 23, 24. *Three credit hours.*

PHYSICS 110.**Modern Physics II.**

Continuation of Physics 109. Three lectures. Prerequisite: Ph. 109. *Three credit hours.*

PHYSICS 115.**Optics.**

"Optics" as used in this course covers the electromagnetic spectrum from ultra-violet through the visible and infrared to microwaves. Geometrical optics is largely an extension of principles developed in previous courses. Physical or wave optics includes such topics as interference, diffraction, and polarization. Covered also are the fundamental principles involved in the generation and production of radiation in this spectral band. Three lectures and one (three-hour) laboratory period. Prerequisite: Ph. 21, 22 or Ph. 25. *Four credit hours.*

PHYSICS 120.

Theoretical Mechanics.

Newton's laws of motion, three-dimensional kinematics and dynamics, central force motion, motion of a system of particles, generalized coordinates, constraints, Lagrangian and Hamiltonian dynamics, rigid body dynamics, inertia and stress tensors. Three lectures. Prerequisite: Ph. 21 or Ph. 23. *Three credit hours.*

PHYSICS 125.

Thermal Physics.

Introduction to thermodynamics, thermodynamic systems, state variables. Zeroth law of thermodynamics and thermometry, equations of state, first and second laws of thermodynamics and their applications to simple systems, thermodynamics potentials, the third law of thermodynamics. The physics of low temperatures. Kinetic theory of gases, the distribution of molecular velocities and transport properties of gases. Three lectures. Prerequisite: Ph. 21, 22 or Ph. 23, 24. *Three credit hours.*

PHYSICS 130.

Electricity & Magnetism.

Electrostatics, Laplace's and Poisson equations, dielectrics, electrostatic energy, electric current, magnetic fields, electromagnetic induction, magnetic energy, Maxwell's equations and their application to wave propagation in various media, reflection, waveguides. Electrodynamics of an electron. Three lectures and one (three-hour) electrical measurements laboratory period. Prerequisite: Ph. 22 or Ph. 24. *Four credit hours.*

PHYSICS 135.

Electronics.

A/C circuit analysis and filter theory. A study of the characteristics of semiconductor diodes, transistors, vacuum and gas filled electron tubes. The basic circuits in which these devices are used. Three lectures and one (three-hour) laboratory period. Prerequisite: Ph. 22 or Ph. 24. *Four credit hours.*

PHYSICS 141.

Atomic Physics I.

The first semester of a two semester course on special relativity, quantum theory, wave mechanics, atomic and molecular physics. Three lectures and one (three-hour) laboratory period. *Four credit hours.*

PHYSICS 142.

Atomic Physics II.

Continuation of Physics 141. Three lectures. Prerequisite: Ph. 141. *Three credit hours.*

PHYSICS 145.

Thermophysics I.

Introduction to thermodynamics, thermodynamic systems, state variables (for ideal and real gases), Laws of Thermodynamics and their consequences. Low temperature and liquefaction of gases. Maxwell distribution of velocity, equipartition of energy, specific heats and transport-equipartition of energy, specific heats and transport-coefficients. Three lectures. Prerequisite: Ph. 23, 24. *Three credit hours.*

PHYSICS 146.**Thermophysics II.**

Continuation of Physics 145. Statistical thermodynamics. Maxwell-Boltzmann statistics, entropy and probability relationship, partition function, theory of paramagnetism, adiabatic demagnetization, Bose-Einstein and Fermi-Dirac statistics, specific heat of metals, thermionic emission. Solid state theory, electron theory of metals, electrical and thermal conductivity, zone theory, semi-conductors. Three lectures. Prerequisite Ph. 145.

Three credit hours.

PHYSICS 151.**Theoretical Physics I.**

Selected topics in theoretical physics including statistical mechanics. Three lectures.

Three credit hours.

PHYSICS 152.**Theoretical Physics II.**

Continuation of Physics 151. Three lectures.

Three credit hours.

PHYSICS 155.**Nuclear Physics.**

Nuclear models, radioactive decay, nuclear reactions, nuclear forces, particle detectors and accelerators, nuclear instrumentation, counting statistics. Three lectures and one (three-hour) nuclear physics laboratory period. Prerequisite: Ph. 142.

Four credit hours.

PHYSICS 160.**Solid State Physics.**

Geometrical crystallography and crystal structure; diffraction of waves by crystals, the basic solid types, free electron theory of metals and the thermal, dielectric, optical and magnetic properties of solids. Band theory of solids; the physics of semiconductors. Magnetic resonance, crystal field theory. Three lectures and one (three-hour) laboratory period. Prerequisite: Ph. 151.

Four credit hours.

PHYSICS 191.**Advanced Laboratory.**

Laboratory for seniors in which they do research level experiments. One afternoon each week.

One credit hour.

PHYSICS 201.**Undergraduate Research.**

A program of supervised research above and beyond the level of regular course offerings. The work may be theoretical and/or experimental and is designed to bridge the gap between the undergraduate and postgraduate levels.

Three credit hours.

PHYSICS 202.**Undergraduate Research.**

Continuation of Physics 201 for the second semester.

Three credit hours.

PHYSICS 205.**Relativity.**

Seminar course in special and general relativity theory.

Three credit hours.

DEPARTMENT OF

Psychology

Professor: Rosenkrantz

Associate Professors: Centi, O'Halloran (Chairman), Zlody

Instructor: Ewald

Lecturer: Sills

The course of studies in psychology is made up of a core curriculum, electives in Psychology, and required courses from allied fields. The program is arranged to provide the student with undergraduate preparation for advanced study in this area as well as a breadth of view consonant with the liberal arts tradition of Holy Cross. Contemporary General Psychology, History and Systems of Psychology, Experimental Psychology and Laboratory, Physiological Psychology, and Statistics constitute the core curriculum. Courses from allied fields include: Biology, Mathematics, Physics, Sociology, and Cultural Anthropology.

Individual experimental projects, seminars, and tutorials are encouraged to foster a research spirit and student-professor exchange.

PSYCHOLOGY 41, 42.

Contemporary General Psychology.

A general introduction to the principles of psychology as operative in motivation, learning, perception, and thinking. Application of these principles to areas of emotion, social processes, assessment of abilities, personality, and biological substrates of behavior is also stressed.

Six credit hours.

PSYCHOLOGY 44.

Statistics.

An introduction to statistical methods in the analysis and interpretation of psychological data: measures of central tendency, variability, correlational techniques and reliability of statistical measures. A brief survey of factor analysis and analysis of variance.

Three credit hours.

PSYCHOLOGY 45.

History and Systems of Psychology.

The origin of Psychology and the development of theoretical systems within Psychology are assessed. The main psychological systems: Introspectionism, Behaviorism, Gestalt School, Psychoanalysis, and Hormic Psychology are treated in their historical development.

Three credit hours.

PSYCHOLOGY 47.

Experimental Psychology and Laboratory I.

The methods and techniques of Experimental Psychology and their application to various content areas are treated. Emphasis is placed on psychophysical methods as they apply to the study of sensation, perception, memory and learning. The laboratory includes a number of experiments with the more important pieces of apparatus used in psychological investigations.

Four credit hours.

PSYCHOLOGY 48.

Experimental Psychology Laboratory II.

Selected topics within the areas of sensation, perception, problem solving, social process, and physiology of behavior are investigated in the laboratory. An original experiment, designed and researched by the student, is required. *Two credit hours.*

PSYCHOLOGY 52.

Physiological Psychology.

The structure and function of the nervous system and endocrine glands are studied with reference to man's behavior. The physiological and neural aspects of motivation, emotion, learning, sensation, and perception are emphasized.

Three credit hours.

PSYCHOLOGY 103.

Psychology of Learning.

A presentation and evaluation of the principles of learning theory. Conditioning, transfer of training, and development of human learning and memory are discussed.

Three credit hours.

PSYCHOLOGY 114.

Abnormal Psychology.

A general introduction to the origin, development, classification, diagnosis, and treatment of psychological ills. A history of the treatment of mental illness and the theoretical bases of different schools of therapy are surveyed.

Three credit hours.

PSYCHOLOGY 115.

Psychological Testing.

A history of psychological testing and the rationale of test construction and administration are treated. A critical evaluation of various psychological tests is offered.

Three credit hours.

PSYCHOLOGY 116.

Psychology of Adolescence.

The physiology, psychology, and sociology of adolescence are discussed. Unit topics include physical changes and their implications, psychosexual development, basic determinants of behavior, the adolescent in the home and in the community, and adolescent problems and solutions. Each student is required to complete a research project concerned with some aspect of adolescent development.

Three credit hours.

PSYCHOLOGY 117.

Social Psychology.

A treatment of the role of social and cultural factors in individual behavior. The following topics are included: attitude development and change, prejudice, language and communication, small group processes, and culture and personality.

Three credit hours.

PSYCHOLOGY 119.

Developmental Psychology.

An analysis of the factors underlying behavior at different stages of development with an examination of the role of maturation, motivation, experience, and culture in the sequences of changes in psychological processes.

Three credit hours.

PSYCHOLOGY 122.

Theories of Personality.

A summary and evaluation of the major contemporary theories of personality are presented. Among the theories discussed are those of Freud, Jung, Sullivan, Lewin, Allport, Rogers, Murphy. *Three credit hours.*

PSYCHOLOGY 124.

Exceptional Child Practicum.

The experience of helping exceptional children is combined with theoretical discussion of problems encountered in such work. Under professional supervision, students will establish a relationship on a weekly basis with a mentally retarded, an emotionally troubled and an economically disadvantaged child. A classroom seminar will meet weekly. Course open with permission of instructor to majors who have completed Psychology 119. *Three credit hours.*

PSYCHOLOGY 125.

Culture and Personality.

The findings of an area where cultural and social anthropology are related to psychology of personality will be discussed. Contemporary schools of thought will be surveyed, methods of research will be studied and some applications will be examined. Open to majors who have completed Psychology 117. *Three credit hours.*

PSYCHOLOGY 127.

Introduction to Counseling and Psychotherapy.

An historical and critical evaluation of traditional methods of counseling and psychotherapy. Psychoanalytic, behavioral, directive, and non-directive techniques will be discussed. Behavioral therapy will be especially stressed. *Three credit hours.*

PSYCHOLOGY 130.

Behavior Process.

A complex analysis of human behavior within a conceptual S-O-R framework. Motivation, behavioral process, modification strategies, basic and concrete need structures are highlighted. *Three credit hours.*

(Not offered 1969-70)

PSYCHOLOGY 132.

Psychology of Perception.

Topics in the Psychology of Perception include: perceptual theory, patterning, autochthonous elements, learning, and personality. A research project in selected areas is presented by the students enrolled in the course. *Three credit hours.*

PSYCHOLOGY 134.

Human Learning and Motivation.

Emphases include the development of language, thinking, problem solving, and various conceptual skills. Primary motivational states in human behavior are examined. Learned motives such as achievement, fear, curiosity, and anxiety are stressed. *Three credit hours.*

PSYCHOLOGY 203.

Advanced Statistics I.

The relationship between statistical procedures and theoretical problems encountered in designing psychological experiments is presented. Topics covered include: sets, functions, probability, and distributions. This course is available to students who have completed elementary statistics requirements. *Three credit hours.*

PSYCHOLOGY 204.

Advanced Statistics II.

Complex analyses of variance, trend analysis, and analysis of covariance are related to theoretical issues in psychological research. This course is available to students who have completed Psychology 203.

Three credit hours.

PSYCHOLOGY 211, 212.

Research Projects.

Students who are especially interested and who have sufficiently high grades may assist faculty members in their research. Their assistance may take the form of library research, bibliography organization, data computation and analysis, and administration of experiments. Under faculty direction, students may undertake their own projects.

Two credit hours.

DEPARTMENT OF

Sociology

Professor: Imse

Assistant Professors: Al-Khazraji, Johnson (Chairman), P. Marden,
McMillan

Instructor: Fallon

Lecturer: Fitzsimmons

Visiting Professor: C. F. Marden

The program for majors in sociology is designed to provide a critical understanding of the elements of theory and methodology, knowledge of the social institutions and processes characteristic of society, and an examination of social problems and stresses which afflict society. The curriculum is broadly conceived to serve majors with diverse educational and career interests, ranging from graduate studies in sociology, social work and urban affairs to careers in business, government, medicine and law. Offerings include both seminar and field research courses, and the department maintains a laboratory-workshop in conjunction with its field work operations.

Ten semester courses constitute the major. All majors are required to take the general course (Sociology 51) and one theory course (Sociology 241 or 242). Majors planning graduate studies in sociology, social work or allied disciplines must also take courses in both research methods (Sociology 223) and social statistics (Sociology 224), all other majors must take either Sociology 223 or 224. The remainder of each major's program will be arranged in consultation with his departmental advisor.

Sociology 51 is a prerequisite for all courses except Freshman Sociology Seminar (Sociology 21) and Cultural Anthropology (Sociology 71) and normally will be taken in the sophomore year. The 200-level courses are reserved for junior and senior majors except by permission of the instructor.

Non-majors who have had Sociology 51 are free to elect any of the 100-level courses. Junior and senior non-majors may, with the instructor's permission, enter selected 200-level courses.

A Freshman Seminar (Sociology 21) will be offered each semester in cooperation with the College Honors Program.

SOCIOLOGY 21.

Freshman Sociology Seminar.

Three credit hours.

SOCIOLOGY 51.

General Sociology.

The introduction to sociological analysis of social groups, social processes, culture and social change.

Three credit hours.

SOCIOLOGY 71.

Cultural Anthropology.

An introductory survey of the field. Comparative analysis of social organizations. Applied anthropology. *Three credit hours.*

SOCIOLOGY 111.

Social Problems.

A consideration of some major problems of industrialized and industrializing societies, notably alcohol, crime, juvenile delinquency, and family disorganization, in terms of systemic factors involved in generating problems and the effects of the problems on the system. *Three credit hours.*

SOCIOLOGY 115.

Racial and Ethnic Relations.

Comparative analysis of selected minority groups. Examination of the relationships between minority groups and major American institutions. Special emphasis will be given to an examination of race relations and the contemporary urban scene. *Three credit hours.*

SOCIOLOGY 117.

Criminology.

Description and analysis of theories of crime causation, the modes of societal responses to crime, the relationships between crime and patterns of legitimate society, and the specific problems encountered in correctional programs. *Three credit hours.*

SOCIOLOGY 131.

Urban Community Organization.

The American urban community is viewed as a social system. Emphasis is given to urban problems, urban development, social welfare and social policies, the ideology and issues of urban planning, and the role of government, social agencies, and the citizen. Course requires agency field work in Worcester. *Three credit hours.*

SOCIOLOGY 155.

Social Psychology.

This course aims to acquaint students with the role of social and cultural factors in the behavior of individuals. Included will be such topics as: attitude development and change, prejudice, language and communication, small group processes, the relationship of culture and personality, and interpersonal perception. *Three credit hours.*

SOCIOLOGY 161.

Sociology of Religion.

Functional and phenomenological approaches to the Sociology of Religion. Religious experience, its institutionalization, and the consequent dilemmas. Religion in contemporary American society. *Three credit hours.*

SOCIOLOGY 166.

The Family.

The family as a social system, functionally and historically, with special reference to American urban life. Family process, culture, and personality development. The family and related social systems. *Three credit hours.*

SOCIOLOGY 206.**Population.**

Population distribution, composition, and growth in North America and Eurasia; trends in fertility and mortality; migration; population prospects and policies.

Three credit hours.

(Not offered 1969-70)

SOCIOLOGY 208.**Immigration.**

Immigration as a determinant of the character of American culture. Patterns of immigration to the Americas. Internal migration with special reference to racial distribution. Immigration and the processes of assimilation and conflict.

Three credit hours.

(Not offered in 1969-70)

SOCIOLOGY 215.**Sociology and Law.**

Focuses on the relationship between legal systems of diverse societies in terms of substantive laws, procedural prescriptions, and legal ideologies. Current historical and anthropological materials are utilized to demonstrate the range of characteristics of and modes of divergence between various legal systems.

Three credit hours.

(Not offered 1969-70)

SOCIOLOGY 216.**Minorities Around the World.**

Race or ethnic groups who have minority status in various nations of the world will be studied and compared within a systematic framework of dominant-minority relations. Selections will be made from Africa, Latin-America, South East Asia, the U.S.S.R. and the Commonwealth nations.

Three credit hours.

SOCIOLOGY 223.**Methods of Social Research.**

Introduction to the application of the scientific method to the analysis of social phenomena. Review of methodological orientation in sociology; emphasis on formal steps in research design, including definition of problem, hypothesis construction, development of instruments of observation, collecting and processing data for computer analysis, and interpretation of data. Participation in field research is part of course.

Three credit hours.

SOCIOLOGY 224.**Social Statistics.**

A survey of the basic statistical concepts used in the analysis of sociological data. Both descriptive and inductive statistical techniques are studied. Special emphasis will be given to the problem of statistical inference, probability theory, and the application of certain statistical tests.

Three credit hours.

SOCIOLOGY 235.**Urban Society.**

The development of urban communities. An analysis of ecological processes in the patterning of cities, urban institutional structures and functions. Urban planning and redevelopment.

Three credit hours.

SOCIOLOGY 241.

Development of Social Theory.

A descriptive and critical study of the development of sociological theory from Comte to the present. Principle attention is given to the works of Durkheim, Max Weber, and Simmel.

Three credit hours.

SOCIOLOGY 242.

Contemporary Sociological Theory.

An elaboration of a frame of reference for the analysis of social systems in terms of contemporary theory.

Three credit hours.

SOCIOLOGY 245.

Class Conflict and Social Change.

The dichotomous and the integral models of society considered in relation to the explanation of social change in industrial society.

Three credit hours.

SOCIOLOGY 246.

Social Stratification.

Analysis of the dimensions of social stratification and critical examination of the major contributions to stratification theory and research.

Three credit hours.

SOCIOLOGY 252.

Personality Society and Culture.

An investigation and analysis of recent writings from psychology, anthropology and sociology focusing on an interdisciplinary understanding of personality and social systems; the structural-functional analysis of social systems and the determinants of personality formation.

Three credit hours.

(Not offered 1969-70)

SOCIOLOGY 263.

Medical Sociology.

Focuses on the institution of modern medicine with emphasis on the social epidemiology of disease, the organization of medical care, and the social roles of those responsible for this care. This includes analysis of the problems of defining illness, the processes of seeking treatment, and the role of the sick person. Major trends are analyzed and cross-cultural comparisons are made.

Three credit hours.

SOCIOLOGY 264.

Political Sociology.

Examination of major theorists and of sociological research on political processes. Emphasis will be on community and national power systems including the roles of parties, bureaucracies and the populace.

Three credit hours.

SOCIOLOGY 267.

Industrial Sociology.

Social organization of industry: functions of members of industrial organization, status, social structure; patterns of interaction, and relations of industry and society.

Three credit hours.

(Not offered 1969-70)

SOCIOLOGY 268.

Bureaucracy.

Formal organizations and their informal dynamics. Bureaucracy in contemporary industrial, political, and military systems.

Three credit hours.

(Not offered 1969-70)

SOCIOLOGY 270.

Social Change.

An overview of the major theories and studies of change and development in society and community with respect to the sources, direction, the rate and degree, agents, and planning of change in modern industrial and emerging nations. Relevant theories and research in disciplines related to sociology will be examined in depth. *Three credit hours.*

SOCIOLOGY 276.

Social Structure and Change in the Middle East.

Analysis of the major social institutions of the contemporary Middle East, with special reference to the interrelationships between Islamic community organization, value systems, personality, demographic structure, ethnic minorities, and current ideologies. The processes and consequences of modernization are examined within the context of traditionalism, industrialization, and urbanization. *Three credit hours.*

SOCIOLOGY 295.

Tutorial.

Three credit hours.

SOCIOLOGY 298, 299.

Senior Seminar.

Six credit hours.

Students majoring in Sociology may take selected Sociology courses at Assumption College or Clark University which are not currently being offered at Holy Cross. Interested students should contact the department chairman.

DEPARTMENT OF

Theatre Art

Instructor: McInerney

Lecturers: Graneto, Herson (Director)

The Division of Theatre Art offers a curriculum designed to develop theatre artists with a sound humanistic education. To this end students who wish to pursue the complete theatre curriculum are urged to select English, modern languages, or classics as their major field of concentration, so that they may obtain the strongest possible education in dramatic literature. Theatre students are also urged to take two half-courses in the history of art or to major in Fine Arts. All theatre art students, but especially those who plan to pursue graduate study in the field, are advised to gain proficiency in two modern languages.

The curriculum of the division is designed around a core of courses necessary for every theatre artist, whatever his specialty. The core courses are: Theatre History and Criticism I, II, and III; Basic Technical Theatre Practice; Introduction to Play Direction; Introduction to Stage Design: Theory; and Basic Acting Skills.

Two sequences of advanced courses, one for potential actors and one for potential stage designers, are offered. Within the acting sequence allowance is made for a student to choose two courses in advanced directing.

Registration in any course in the division may be made only by permission of the instructor of the course and the Director of the Division.

Fenwick Theatre, a recently constructed and fully equipped thrust-stage theatre, houses the annual five- or six-play season of the Division of Theatre Art. The College has enlisted a semi-professional company, Entr'Actors Guild, Inc. to act and work with the students in producing the major season under the administration of the faculty of the Division of Theatre Art. The annual season in Fenwick Theatre, consequently, serves several purposes. It provides the students and residents of the Worcester area with theatrical productions of high quality. It also serves as a laboratory where students of the Division and other interested persons may learn the arts and skills of the theatre. Finally, it is a showcase where students of the Division, after they have developed sufficiently through their course work, may practice their art for a discerning public.

All students and faculty of the colleges participating in the theatre program may apply for acting and staff positions for plays of the annual season. Other persons may do so by permission of the Director of the Division and the director of the play for which they apply.

THEATRE HISTORY AND CRITICISM I.

History of theatre architecture and scene design.

Three credit hours.
(Not offered 1969-70)

THEATRE HISTORY AND CRITICISM II.

History of production methods and acting.

Three credit hours.

THEATRE HISTORY AND CRITICISM III.

Historical studies in world drama and drama criticism.

Three credit hours.

The above three courses make up a history of Western theatre from classical Greece to the present and include a study of the origins of the theatre, the origin and development of the major theatrical genres, the emergence of the national theatres of Western Civilization, the history of theatrical methods and techniques, and the aesthetic, historical, philosophical and sociological significance of theatre through the ages.

The Theatre History and Criticism courses are offered at Clark University by Dr. Neil R. Schroeder.

THEATRE ART 91.

Introduction to Stage Design; Theory.

A course intended to acquaint the student with the basic steps involved in the creation of stage settings. It is understood that most students taking this course will have a major interest in another area of theatre art, and this course will give a basic understanding of the designer's contribution to the theatrical embodiment of dramatic literature. The course will include a general discussion of design methods such as ground plan, compositional elevation, mechanical perspective, color theory, and stage lighting.

Three credit hours.

THEATRE ART 93.

Basic Technical Theatre Practice.

Classroom instruction in the theories and techniques of the building, painting and lighting of stage settings; organization and operation of production crews; the fundamentals of make-up. Laboratory hours to be arranged in coordination with the schedule of the major season and/or studio productions. This course is presented at the beginning of the curriculum so that the student understands by first-hand acquaintance that to create a complete work of theatre art requires hard practical planning and work.

Three credit hours.

THEATRE ART 95.

Introduction to Play Directing.

The first part of the course is a study of the writings, both theoretical and practical, of prominent directors, within the context of the historical development of the art of directing. This groundwork having been laid, the student learns the basic techniques of play selection, casting, scheduling and conducting rehearsals, composition, picturization, movement, rhythm, and pantomimic dramatization. Practice of the basic techniques will be done in either classroom exercises or in laboratory studio productions, or both, according to the needs of individual students.

Three credit hours.

THEATRE ART 97.

Basic Acting Skills I.

Study and intensive practice of the basic techniques of producing good voice and speech, relaxation, breath control, phonation, and resonance for vocal tone, proper formation of the sounds of English and correction of regional accent. Laboratory in stage movement.

Three credit hours.

THEATRE ART 98.

Basic Acting Skills II.

Further development of the techniques learned in Basic Acting Skills I. Elementary work in the interpretation of a role. Prerequisite: Basic Acting Skills I.

Three credit hours.

THEATRE ART 193.

Improvisations for the Theatre.

A graduated system of problems and theatre games designed to train the student to free himself for concentration and spontaneous effort to create a situation imaginatively and to play a role in it.

Three credit hours.

(Not offered 1969-70)

THEATRE ART 195.

Styles of Acting.

Analysis of the varieties of practice of the actor's art from the Greeks to the present day and of the historical, social, and aesthetic causes of the various styles. Each student will be required to perform in a sample of each of the principal styles and possibly to direct samples of the styles. In addition, each student will be required to submit papers on a chosen specialty or specialties. Prerequisite: Basic Acting Skills I and II.

Three credit hours.

THEATRE ART 197.

Oral Interpretation of Literature.

Theory and practice of interpreting the meaning of the printed word, and a development of skill in the oral reading of poetry and drama.

Three credit hours.

(Not offered 1969-70)

THEATRE ART 199.

Introduction to Stage Design: Technique.

An introductory course in design for the theatre, exclusively for students who have a strong interest in the visual aspects of production and are planning to continue the study of stage design.

The twofold aim of this course is (1) to increase the student's ability to find in the playwright's text a stageworthy idea that will serve as a basis for theatrical production, and (2) to provide the student with firm practical knowledge of the fundamental methods of scene design and stage lighting.

The student will be expected to master the fundamentals of mechanical perspective and other scenographic techniques such as ground plans, working drawings, and light plots for the stage. Prerequisite or corequisite: One course in drawing and painting, and/or submission of sketches or similar materials which demonstrate some talent in the graphic arts; Introduction to Stage Design: Theory.

Three credit hours.

THEATRE ART 291.

Historical Styles of Stage Design.

A course providing a series of opportunities to continue drafting and rendering designs for the theatre. Problems will be selected from classics of dramatic literature which represent important epochs in theatre history. The student will be expected to expand his knowledge of the theatre of these periods and of their art and architecture, and, basing his ideas firmly upon research in the given styles, to evolve a stage design for a modern production of the plays assigned. Prerequisites: Introduction to Stage Design: Technique. Art History. Theatre History and Criticism I, II, or III.

Three credit hours.

THEATRE ART 293.

Theatrical Styles of Stage Design.

A course providing special emphasis on the rendering of designs and painter's elevations for the stage. Students will be given problems in design for many different types of theatrical entertainments such as opera, ballet, modern dance, musical comedy, and circus. These problems should challenge the student's visual imagination and allow him to employ various media in the creation of designs. Projects from this course should exhibit the designer's ability and versatility in theatrical design and provide a portfolio of sketches required for admission to graduate study in theatrical design. Prerequisite: Introduction to Stage Design: Technique.

Three credit hours.

(Not offered 1969-70)

THEATRE ART 295.

Scene Study I.

Development to the level of class performance of roles in scenes and one-act plays; assigned research; analysis of a major role scene by scene. Admission by permission of instructor. Prerequisite: Basic Acting Skills I and II; Styles of Acting.

Three credit hours.

THEATRE ART 296.

Scene Study II.

Students prepare scenes for class and/or laboratory performance and criticism. Each student keeps a written record of the research, materials, and techniques used in preparing the roles he plays and a critical diary of rehearsals, performance, and class evaluation of performance. Prerequisites: Basic Acting Skills; Scene Study I and permission of instructor.

Three credit hours.

(Not offered 1969-70)

THEATRE ART 297.

Advanced Play Directing I.

While developing the student's facility in the use of the fundamental techniques of directing, this course will stress the creative relationship of the director to the actor. Readings in anecdotal and diary accounts of rehearsals and productions. Laboratory studio production of at least one one-act play or equivalent scene from a longer play. Prerequisite: Introduction to Play Directing.

Three credit hours.

THEATRE ART 298.

Advanced Play Directing II.

Facility in fundamentals and in director-actor relationship is developed. Readings in anecdotal, diary, and theoretical literature. Laboratory studio production of at least one one-act or long scene more complex than those done in Advanced Play Directing I. A complete prompt book will be required for each studio production. Prerequisite: Advanced Play Directing I.

Three credit hours.

DEPARTMENT OF

Theology

Professor: W. V. E. Casey

Associate Professors: Brooks (Chairman), Burke, Delaney, Forde, McGrady,
J. Walsh, T. Walsh

Assistant Professors: G. Barry, Donahue, Donnelly, Lindberg

Instructors: Greaney, E. McCarthy, McNearney, Mininni, Stecker

Lecturers: P. Fennessey, T. McGill, J. Melamparampil

The application of liberal learning to religious questions has produced that form of systematic discourse which is called theology. In the category of major cultural phenomena to which authentic and comprehensive scholarship must give attention, a full awareness of man's basic orientation demands serious study of the great religious traditions of East and West. Further, an understanding of religion and its historical significance as a factor in political, social, and economic change is essential for an education that claims to be liberal. It is for the purpose of initiating and fostering such a mature confrontation with the meaning of man, with oneself, and with the existence and relevance of God to human life, that the department of theology requires all students, regardless of religious affiliation, to complete the core requirement in theology as part of the core curriculum.

CORE REQUIREMENT

Students fulfill their core requirement in theology by successfully completing a two-semester course in either *Biblical Literature* or *Religion in Human Life* (not a combination of the two).

Biblical Literature—An introduction to the origins of the Judaeo-Christian tradition as reflected in the literature of the Old and New Testaments.

Religion in Human Life—An historical approach to the phenomenology of religious experience. The purpose of the course is to examine the fundamental structures and insights that underlie all religious experience, and the archetypal symbols in which these insights have been perennially embodied. The lectures, readings and group discussions will also deal with the great religions of history in relation to Christianity and to the major aspects of contemporary culture, art, literature, politics, science and technology.

MAJOR PROGRAM IN THEOLOGY (available in Fall, 1970)

In addition to the core requirement, theology majors must complete 10 semester courses in theology. These courses shall include two from the area of biblical studies, two in historical theology, one in systematic theology, one in theological ethics, one in contemporary theology, two free courses, and a guided research project. A reading knowledge of either French or German is strongly recommended by senior year. Encouragement is also given to the study of Latin, biblical Greek, and/or Hebrew.

SEQUENCE IN CATHOLIC THEOLOGY

In addition to the two-semester core requirement and the major program sequence of electives, the department also offers for those students who desire it a unified sequence of four courses in Roman Catholic theology. The aim of this sequence is to promote a more mature understanding of the rapidly developing theology within the Catholic Church. These courses will be based on the teachings of the Second Vatican Council and will be ecumenical in spirit.

SPECIAL PROGRAMS

Seminars, tutorial reading programs and individual research projects are available to the qualified student by arrangement with the department chairman.

CORE COURSES

THEOLOGY 11, 12.

Biblical Literature.

An introduction to the origins of the Judaeo-Christian tradition as reflected in the literature of the Old and New Testaments.

Six credit hours.

THEOLOGY 13, 14.

Religion in Human Life.

An historical approach to the phenomenology of religious experience. The purpose of the course is to examine the fundamental structures and insights that underlie all religious experience, and the archetypal symbols in which these insights have been perennially embodied. The lectures, readings and group discussions will also deal with the great religions of history in relation to Christianity and to the major aspects of contemporary culture, art, literature, politics, science and technology.

Six credit hours.

BIBLICAL THEOLOGY

THEOLOGY 109.

Epistles of St. Paul.

Selected readings from the Pauline Epistles directed toward an understanding of the development of the kerygma in Paul's preaching.

Three credit hours.

THEOLOGY 201.

Prophecy in Ancient Israel.

A seminar directed toward an analysis of Israelite prophecy seen in its relationship to history, covenant, politics, ethics and eschatology.

Three credit hours.

THEOLOGY 202.

The Fourth Gospel.

A seminar investigating the various Johannine expressions of the fact of the redemptive Incarnation.

Three credit hours.

THEOLOGY 204.

Pauline Theology.

A seminar devoted to an in-depth study of the major Pauline theological themes.

Three credit hours.

THEOLOGY 207.

The Archaeology of Palestine and the Old Testament.

A seminar investigating the relationships between archaeological investigations during the past century and the Old Testament milieu and tradition.

Three credit hours.

HISTORICAL THEOLOGY

THEOLOGY 102.

Origins of Catholic Social Teaching.

Various forms of utopianism and their influence in the evolution of socialism and communism. The development of the doctrine and practice of economic liberalism in the 18th and 19th centuries in England and France. Catholic leaders and the social problem in the 19th century. The formation of Catholic teaching culminating in the *Rerum Novarum* of Pope Leo XIII.

Three credit hours.

THEOLOGY 110.

Christian Denominations.

A study of the origins, development and doctrines of the more prominent Protestant denominations on the American scene.

Three credit hours.

THEOLOGY 114.

Social Teachings of the Church.

The Church in France, England, Ireland and the United States towards the close of the 19th century. Germany and the Kulturkampf. Italy and the Roman question. Social teachings in the 20th century, from Pope Leo XIII through Pope Pius XII.

Three credit hours.

THEOLOGY 115.

The Confessions of St. Augustine.

A textual analysis of the *Confessions of St. Augustine*, with background readings in Manicheism, academic skepticism, and Plotinus.

Three credit hours.

THEOLOGY 120.

Reformation Theology.

An investigation of the theologies of Luther, Zwingli and Calvin as seen against their historical and theological backgrounds.

Three credit hours.

THEOLOGY 125.

Religion in the Culture of Western Civilization.

A study of the determining role of religion in the development of Western Civilization.

Three credit hours.

THEOLOGY 128.

American Church History.

An examination of selected topics confronting religion in America today in the light of our past history.

Three credit hours.

THEOLOGY 129.

World Living Religions.

A survey of primitive religions, and the institutions of Hinduism, Buddhism and Confucianism.

Three credit hours.

THEOLOGY 130.

Protestant Thought Since the Reformation.

A two-semester sequence focusing on (I) Luther, Hume, Kant, Schleiermacher, Hegel, Feuerbach, and (II) Harnack, Kierkegaard, Ritschl, Baur, Bultmann, Barth and Tillich.

Six credit hours.

SYSTEMATIC THEOLOGY

THEOLOGY 122.

Problems of Belief.

An examination of modern man's difficulties in arriving at religious convictions.

Three credit hours.

THEOLOGY 124.

Faith and Modern Man.

An attempt to put the problem of faith within its modern context. In particular, the value and limitations of the anthropocentric thought-form for theology will be examined, along with new movements to express the Christian faith for the "post-secular" man.

Three credit hours.

THEOLOGY 127.

The Problem of God.

A study of transcendence and immanence in the light of theological anthropology, together with an evaluation of modern claims that God is absent, meaningless, or dead.

Three credit hours.

THEOLOGY 131.

Dimensions of the Church.

A study of the nature, structure, and dimensions of the Church with special consideration given to the questions of authority and credibility of the Church in the modern world.

Three credit hours.

THEOLOGICAL ETHICS

THEOLOGY 116.

Marriage and the Family.

A study of the Christian Sacrament of Matrimony considered from the point of view of its canonical, liturgical and ascetical aspects.

Three credit hours.

THEOLOGY 126.

Christian Moral Theology.

An evaluation of contemporary Christian thought and practice in major areas of ethical concern. An in-depth discussion of crucial moral questions in an age of situationism and ethical relativism.

Three credit hours.

THEOLOGY 211.

Theological Ethics: Perspectives on Racism.

A general inquiry into the relationship of Christian thought to the racial crisis. Particular problems such as violence and black power will be analyzed from perspectives of biblical and historical theology.

Three credit hours.

CONTEMPORARY THEOLOGY

THEOLOGY 104.

Ecumenism: Religious and Secular.

A study of the Decree on Ecumenism with special emphasis on the understanding of other religions. The extension of ecumenism into the secular realm, including divisive questions and problems involving the common good will be studied.

Three credit hours.

THEOLOGY 105.

Our Contemporaries' Search for God.

A comparative study of the major writings of Bishop Robinson, Harvey Cox, Karl Rahner, and Teilhard de Chardin.

Three credit hours.

THEOLOGY 106.

Human Living In Teilhard de Chardin.

An in-depth study of Teilhard's *The Future of Man* and *The Divine Milieu*.

Three credit hours.

THEOLOGY 107.

The Church in the Modern World.

A seminar oriented toward an examination of the prominent themes contained in the first part of Vatican II's *Pastoral Constitution on the Church in the Modern World*.

Three credit hours.

THEOLOGY 112.

Atheistic Humanism and Christianity.

A study of the tenets and moral code of scientific humanism and of the efforts of contemporary theologians to render Christianity comprehensible and relevant to modern secularity.

Three credit hours.

THEOLOGY 117.

Theological Perspectives in Modern Literature.

An analysis of works by such writers as Melville, Faulkner, Kafka, Silone, O'Connor, Greene, Mauriac, Joyce, Golding, Camus, Beckett and MacLeish, and a consideration of the essentially theological questions posed by their writings.

Three credit hours.

THEOLOGY 132.

Toward a Theology of Freedom.

A study of the nature and structure of human freedom, its inner relation to authority and grace, and with practical application to current forms of protest and the demand for unlimited personal autonomy.

Three credit hours.

THEOLOGY 203.

The Theological Anthropology of Rahner.

An introduction to the major writings of one of the Church's most productive contemporary theologians.

Three credit hours.

THEOLOGY 205.

Theories of Secularization.

A seminar investigating theories of the origins of our present secular consciousness and the relationship of this secularity to the Christian faith.

Three credit hours.

THEOLOGY 206.

Contemporary Cinema and Humanism.

A film-seminar directed toward an experiential confrontation with the problems of dehumanization in the modern world and with the authentic values of Christian anthropology.

Three credit hours.

THEOLOGY 212.

Religion in Poetry: Gerard Manley Hopkins.

An analysis of the poetry of Hopkins in the light of his religious and theological background.

Three credit hours.

THEOLOGY 222.

Crises in Contemporary Christianity.

A study of the causes of the decline of Christianity in the West, particularly the scientific revolution, modern biblical criticism, and the rise of egalitarian political systems. The prospects of a renewed Christianity, shaped by Vatican II and the theology of hope, will be assessed.

Three credit hours.

Institutes

The College is conscious of the need to contribute of its intellectual resources and the skills of its personnel to the community in which it lives. Matching its educational ideal of civic responsibility, as a civic enterprise it offers summer institutes for secondary school teachers in mathematics, science, and optics/electronics. During the school year it offers in-service institutes in mathematics, physical science and biology for secondary school teachers.

The Institute of Industrial Relations, conducted during the evening hours, and for which no academic credit is given, aims at the intellectual and moral enrichment of the life of participants from management and labor unions. Stress is placed on knowledge of economic conditions in industry, current labor problems, and labor law.

The College offers non-credit summer programs for college and high school students in Basic College Skills, the Fundamentals of English, and Public Speaking. In conjunction with the Fenwick Theatre staff and company, it offers a non-credit summer institute in Theatre Arts.

SUMMER INSTITUTES IN MATHEMATICS, SCIENCE AND OPTICS/ELECTRONICS

June 30–August 8, 1969

The following programs for teachers of junior and senior high school mathematics and science were offered by the College of the Holy Cross with the support of the National Science Foundation.

Mathematics Institute

Prof. Daniel G. Dewey, M.A., *Director*

Staff of the Institute

1969:

Prof. Daniel G. Dewey, M.A.
Prof. Patrick Shanahan, Ph.D.
Prof. James O'Toole, Ph.D.
Prof. Melvin Tews, Ph.D.

Group I:

Prerequisite: At least one year of college mathematics.

MATH S 11.

Introduction to Algebraic Concepts.

The purpose of this course is to provide a background in those topics which are essential for the study of mathematics beyond secondary school and to show how these topics are related to the traditional content of secondary school mathematics. Topics to be covered include the basic algebra of sets, functions and the algebra of functions, and basic algebra systems. *Three credit hours.*

MATH S 12.

Introduction to Analysis.

The purpose of this course is to provide teachers with an up-to-date introduction to the calculus. This course is taught in conjunction with Math S 11 and includes the study of real functions, neighborhood topology of the line, continuous functions, the derivative functions, the definite integral and the fundamental theorem of the calculus. *Three credit hours.*

MATH S 13.

Discussion Periods.

Each member of the Institute will be expected to take part in a discussion period which will link the course matter with the traditional secondary school mathematics. The theme in several sections will be based on material written by the School Mathematics Study Group.

Group II:

Prerequisite: Background equivalent to Group I courses.

MATH S 16.

Introduction to Probability.

The purpose of this course is to provide teachers with a background for the teaching of probability and statistical inference. Topics to be covered include sample spaces, probability and measure, the Bernoulli distribution, the normal curve, Markov chains and linear programming. *Three credit hours.*

MATH S 17.

Introduction to Linear Algebra.

The purpose of this course is to provide teachers with a background for the teaching of algebra, geometry and matrix algebra. Topics to be covered include groups, fields, linear transformations, systems of linear equations and the algebra of matrices. Geometric motivation will be emphasized. *Three credit hours.*

MATH S 13.

Same as Group I.

Science Institute

Prof. Robert B. MacDonnell, S.J., *Director*

Staff of the Institute

1969:

Prof. William A. Campbell, M.S.
Prof. Robert S. Crowe, Ph.D.
Sister Mary Ann Walsh, A.S.C., M.S.

Chemistry:

Prof. Robert W. Ricci, Ph.D.
Sister M. Cabrini, C.S.J., M.S.
Mr. Raymond S. Martin, M.S.

Physics:

Prof. George M. Matous, Ph.D.
Mr. Everett F. Larnard, A.B.

(Associated with each course will be a three-hour laboratory period four afternoons a week.)

BIOLOGY:

S 15.

Cellular Biology and Genetics.

The aim of this course is to provide recent knowledge of the organizational and operational aspects of living matter from the fields of biochemistry, cytology, and physiology. The themes and topics of the course will in large measure be based on the YELLOW version of the BSCS "*High School Biology*."

Six credit hours.

CHEMISTRY:

S 15.

Modern Concepts in Chemistry.

The topics covered will include (a) the structure of the atom, types of valence, geometry of molecules, and the periodic table; (b) electrochemical and electrolytic cells; (c) introductory notions concerning the energy involved in a chemical reaction. Approximately ten lectures will be devoted to each set of topics and the approach will be strongly "CBA"-orientated. The laboratory will also be "CBA"-orientated.

Selection will be limited to participants who give convincing evidence of a serious interest in the "Chemical Bond Approach" chemistry course.

Six credit hours.

PHYSICS:

S 15.

Fundamental Concepts in Physics.

The topics and manner of treatment will be designed to provide background material for the teaching of high school Physics according to the plan of the Physical Science Study Committee. It will consist of a review of the more difficult topics of Mechanics, Electricity, and Modern Physics.

Six credit hours.

Optics/Electronics Institute

Prof. Roy C. Gunter, Jr., Ph. D., *Director*

Rev. Robert B. MacDonnell, S.J., *Associate Director*

Staff of the Institute

1969:

Prof. Roy C. Gunter, Jr., Ph.D.

Prof. Francis W. Kasetta, Ph.D.

Mr. Robert F. Kelley, M.N.S.

Mr. Alfred E. Wandrei, M.N.S.

Mr. Rudolph E. Petrucci, M.Ed.

Mr. George A. Dahlquist, M.N.S.

ELECTRONICS:

S 16.

Electronics.

This course places primary emphasis on understanding of the physical principles of electronics; attention is also paid to the application of these principles to electronic devices, and their use in physics, biology, chemistry, etc.

Review of principles of AC and DC circuits. Atomic structure of matter and movement of charged particles through solids (including semiconductors), gases and vacua; electron emission; photoelectric effect. Power supplies, amplifiers, cathode ray oscilloscopes, vacuum tube voltmeters, oscillators, etc. Integration of lecture and laboratory material into a high school program. Assembly of vacuum tube voltmeter kit, and analysis of operation.

Six credit hours.

OPTICS:

S 17.

Optics.

A basic physics course in optics: geometrical (lenses, mirrors, prisms), physical (wave theory, interference, diffraction), and quantum (photons, photoelectric effect) aspects. Emphasis on modern applications in microwave optics, lasers, Doppler shift of radio frequency emission from satellites. Theoretical basis for understanding modern optics, combined with experimental experience valuable for the high school program.

Six credit hours.

Scholarships

General

The financial aid program at Holy Cross has been established to assist students who would otherwise not be able to attend the College due to financial restrictions. In addition to the endowed scholarships and restricted awards listed below, the College sets aside substantial funds from its annual operating income to assist worthy candidates in meeting their educational expenses.

Presidential Scholarships

These scholarships were instituted in 1961 in recognition of those Jesuit Education Association high schools which regularly send to Holy Cross excellently prepared students. One Presidential Scholarship will be awarded annually to a senior from each of these Jesuit high schools. The winner will be named by the College from three finalists designated by the administrators of each high school as outstanding for academic achievement, character, personality, and leadership. The high schools announce this competition annually. The scholarship stipend will vary from \$100.00 (where there is no financial need) to a maximum of full-tuition. Holy Cross will meet additional need through loans and/or campus employment.

Endowed Scholarships

THE GOVERNOR AMES SCHOLARSHIP

Established in 1887 by Governor Oliver Ames. (Income on \$1,000.00)

ANONYMOUS

Established in December, 1965, by an anonymous donor. Income to be used for scholarships to be awarded at the discretion of the president of the College. Preference to students of any creed from the Diocese of Springfield, Massachusetts. (Income on \$69,000.00)

THE EUGENE A. BICKFORD SCHOLARSHIP

Established in October, 1932, from the estate of Mrs. Mary A. Magenis of Brookline, Mass., in memory of her brother, the late Eugene A. Bickford, '96. The annual income to provide for the education of a deserving student under such conditions and regulations as imposed by the faculty of the College. (Income on \$5,000.00)

THE REV. CHARLES E. BURKE SCHOLARSHIP

Established in 1895. Appointment to be made from residents of St. Francis Parish, North Adams, Mass. (Income on \$3,000.00)

THE JAMES M. BURKE SCHOLARSHIP

Established on April 1, 1950, from the Estate of William H. Burke. The beneficiary is to be selected by the Trustees of the College. (Income on \$11,662.69)

THE DR. AND MRS. HARRY P. CAHILL SCHOLARSHIP

Established in June 1963, from a Trust Fund established by Dr. Harry P. Cahill and the Estate of his wife, Anne R. Cahill. Income to be used to aid students who lack sufficient financial means for their education. Selection is to be made by college authorities. (Income on \$55,543.48)

THE ROBERT J. CAIRNS MEMORIAL FUND

Established on September 24, 1953, by bequest from the estate of Alfred F. Finneran, for scholarship aid to worthy students. (Income on \$5,000.00)

THE THOMAS CALLAGHAN SCHOLARSHIP

Established in 1914 by the late Thomas Callaghan of Leicester, Mass., limited to residents of Worcester County, "preference to be given to those preparing for the priesthood." (Income on \$2,000.00)

THE HONORABLE JAMES BERNARD CARROLL SCHOLARSHIP

Established in 1939 by Mrs. James Bernard Carroll as a memorial of her husband, the late Justice James Bernard Carroll of the class of 1878. Restricted to graduates of St. Michael's Cathedral High School, Springfield, Massachusetts. Selection to be made by the President of Holy Cross College and the Reverend Rector of St. Michael's Cathedral, Springfield, on candidate's character, scholarship and extracurricular achievements.

THE FRANK D. COMERFORD MEMORIAL FUND

Established by Archibald R. Graustein in 1959. (Income on \$17,000.00)

CLASS OF 1963

Pledges of members of the class of 1963 to Development Fund to be used to establish a scholarship. Payments to June 30, 1968, \$19,212.80.

CLASS OF 1964 SCHOLARSHIP

Pledges of members of the class of 1964 to Development Fund used to establish a scholarship. Payments to June 30, 1968, \$14,979.32.

THE CONNECTICUT VALLEY ALUMNI SCHOLARSHIP

Established in 1912 by the Alumni of Connecticut Valley. (Income on \$1,725.00)

THE MAURICE CONNOR MEMORIAL SCHOLARSHIP

Established in 1929 by Mr. John T. Connor in memory of his brother, Maurice. The intention of the donor is to provide, for one boy, board, room, tuition and fee charges, as far as the income will provide them. The single beneficiary is to be chosen by the pastor of St. Mary's Church, Westfield, Mass. (Income on \$15,000.00)

THE MONSIGNOR GEORGE S. L. CONNOR SCHOLARSHIP

Established on October 18, 1955, by gift of the late Msgr. George S. L. Connor, '07. Selection to be made by the president of the College who shall give first preference to a worthy applicant who is a member of Holy Name Parish in Springfield, Massachusetts. If no such eligible candidate applies, then such a candidate who graduates from Cathedral High School shall be considered; if none such, then any applicant from the Springfield high schools. Candidates must pass a scholarship test and give evidence of good character and leadership qualities.

THE THOMAS COSTELLO AND ANN COSTELLO SCHOLARSHIP

Established on December 9, 1947, by bequest of Susan A. Costello in memory of her parents, and by a bequest from the estate of Fanny Goodwin Hobbs. Income to be used to aid a student who lacks sufficient financial means for his education and who has expressed the intention of entering the priesthood. (Income on \$10,000)

THE CROWLEY FAMILY MEMORIAL SCHOLARSHIP I.

Established on July 2, 1947, by bequest of Miss Bridget T. Crowley of Springfield, Mass. Beneficiary to be selected by competitive examination and is open to students of the parochial and public high schools of Springfield, Mass., who are morally, mentally and physically worthy and competent and who show promise of ability, but who have such limited financial means that, if not aided by a scholarship, they would be unable to attend college. (Income on \$13,033.00)

THE CROWLEY FAMILY MEMORIAL SCHOLARSHIP II.

Established on July 2, 1947, by bequest of Miss Bridget T. Crowley of Springfield, Mass. Conditions same as the Crowley Family Memorial Scholarship I. (Income on \$14,642.14)

THE CROWLEY FAMILY MEMORIAL SCHOLARSHIP III.

Established in 1947 by bequest of Miss Bridget T. Crowley of Springfield, Mass. Conditions same as the Crowley Family Memorial Scholarship I. (Income on \$14,122.99)

THE CRUSADER COUNCIL KNIGHTS OF COLUMBUS SCHOLARSHIP

Established in June, 1963 by a gift of \$5,000.00 toward the establishment of a \$15,000.00 scholarship in honor of Rev. Joseph F. Busam, S.J., and in gratitude for his many years of service as Chaplain of the Crusader Council. Income to be used with preference to be given to premedical or predental students. (Income on \$15,000.00)

THE RIGHT REV. MONSIGNOR DANIEL F. CURTIN SCHOLARSHIP

Established in 1921 by the Rt. Rev. Monsignor Daniel F. Curtin, Glenn Falls, N.Y., to be appointed by the pastor of St. Mary's Church, Glens Falls, N.Y. (Income on \$10,000.00)

DR. AND MRS. CARL J. DE PRIZIO SCHOLARSHIP

Established on October 30, 1959, by gift of 300 shares of Boston Fund, Inc. Income to be used for award to deserving student in sciences.

THE DANIEL T. DEVINE SCHOLARSHIP

Established in October, 1945, from the estate of Mary F. Devine in memory of her brother, Rev. Daniel T. Devine. To be awarded as a result of competitive examination to the member of the graduating class of St. Mary's Parochial School, Milford, Mass., who has attended said high school for four years and who has been a member of St. Mary's Parish throughout his high school course. (Income on \$15,000.00)

THE JAMES F. DONNELLY, '99 SCHOLARSHIP

Established on May 11, 1956 by gift from Sylvan Oestreicher Foundation. (Income on \$15,000.00)

THE EASTMAN KODAK COMPANY SCHOLARSHIP

Established on September 16, 1960. (Income on \$7,200.00)

THE THEODORE T. AND MARY G. ELLIS SCHOLARSHIP FUND

Established in 1941 by the estate and through the generosity of the late Theodore T. and Mary G. Ellis. From the income of this fund, several scholarship awards of full or partial tuition are annually granted to residents of the City of Worcester. (Income on \$283,834.49)

THE REV. PATRICK J. FINNEGAN, P.R. SCHOLARSHIP

Established on November 28, 1955, by bequest from the estate of Rev. Patrick J. Finnegan. Income to be used to assist needy boys from Portsmouth, N. H. (Income on \$5,032.60)

GENERAL MOTORS COLLEGE PLAN SCHOLARSHIP

A four year scholarship offered annually by General Motors Corporation. The amount of the award varies with the financial need of the recipient as determined by the General Motors Scholarship Committee.

THE "IN MEMORY OF DAVID GOGGIN" SCHOLARSHIP

Established in 1925 by Mrs. Catherine M. Goggin, in memory of David Goggin. Preference to be given a relative. (Income on \$1,000.00)

THE THOMAS F. GROGAN SCHOLARSHIP

A memorial of the deceased father of Dr. Richard H. Grogan, '35, and his brother, Fr. Thomas Grogan, S.J., (Income on \$4,100.00)

THE MONSIGNOR GRIFFIN SCHOLARSHIP

Established in 1895, limited to residents of St. John's Parish, Worcester, Mass. (Income on \$1,000.00)

THE MARY AGNES HABERLIN FOUNDATION

For worthy students chosen by the President or Faculty of the College. (Income on \$249,111.14)

THE JOSEPH T. HACKETT MEMORIAL SCHOLARSHIP

Established by a bequest from the estate of Malachi C. Hackett. Income to be awarded to worthy and needy students with preference given to residents of Meriden, Conn. (Income on \$50,000.00)

THE JOHN H. HALLORAN SCHOLARSHIP I.

Established in 1909 by Mr. John H. Halloran of New York, as a memorial of his brother, the late William J. Halloran, of Worcester, competition open to the country. (Income on \$12,000.00)

THE JOHN H. HALLORAN SCHOLARSHIP II.

Established in 1921 by Mr. John H. Halloran of New York, as a memorial of his brother, the late William J. Halloran, of Worcester. Selection to be made from the students of the public and parochial schools of Northampton, Mass., by means of competitive examinations. (Income on \$12,000.00)

THE REV. THOMAS STEPHEN HANRAHAN SCHOLARSHIP

Established in January, 1963 by a bequest from the Estate of Margaret Ellen Kearney as a memorial to the Rev. Thomas Stephen Hanrahan. Income to be used to aid a worthy student. (Income on \$5,000.00)

THE REV. JEREMIAH J. HEALY SCHOLARSHIP I.

Established in 1912 by the Rev. Jeremiah J. Healy, of Gloucester, Mass., for a candidate for the priesthood worthy of financial aid. (Income on \$1,500.00)

THE REV. JEREMIAH J. HEALY SCHOLARSHIP II.

Same as the "Rev. Jeremiah J. Healy Scholarship I." (Income on \$1,500.00)

THE RICHARD HEALY SCHOLARSHIP

Established in 1908 by Mr. Richard Healy of Worcester, open to competition for residents of Worcester County regardless of creed. (Income on \$8,000.00)

THE MR. AND MRS. RICHARD HEALY SCHOLARSHIP

Established in 1916 by Mr. and Mrs. Richard Healy of Worcester, for benefit of a direct relative of donors. (Income on \$43,872.84)

THE REV. FREDERICK W. HEANEY, S.J., SCHOLARSHIP

Established in 1920 by Miss Lillian Heaney, in memory of her deceased brother, the Rev. Frederick W. Heaney, S.J. (Income on \$2,500.00)

THE FRANCES AND JACOB HIATT SCHOLARSHIP

Established for deserving students, with preference to those from Worcester County; selection to be made by the President of the College. (Income on \$2,300.00)

THE JOHN W. HODGE SCHOLARSHIP

Established in 1946 by a bequest from the late John W. Hodge to aid some worthy Catholic boy from Cambridge, Mass., the terms and conditions of which are to be fixed and regulated by the college. (Income on \$4,466.20)

THE HENRY HOGAN SCHOLARSHIP

Established by gifts of Mr. Henry M. Hogan '18. Income to be awarded to worthy students selected by the President or Faculty of the College. (Income on \$197,800.00)

THE JOHN T. HOLLAND '17, MEMORIAL SCHOLARSHIP

Established on January 2, 1954, by gift from Matthew M. Berman. To be used for worthy students selected by the President of the College. (Income on \$8,500.00)

THE HOLY CROSS SCHOLARSHIPS

These are a limited number of tuition or other partial awards that are made from the college funds, at the times and to the amounts that the financial position of the college permits.

KATHERINE H. HOY SCHOLARSHIP

Established on December 14, 1959 by bequest of \$5,000.00 from the Estate of James M. Hoy, '05. Income to be used to assist a student with preference given to a needy and deserving boy of St. Stephen's Catholic Parish of Worcester.

THE JOHN COLLINS HURLEY SCHOLARSHIP

Established on April 28, 1953 by bequest from the estate of Margaret M. Hurley. Income to be used for education of worthy graduate of Durfee High School, Fall River, Mass. (Income on \$5,026.67)

THE WARREN JOSEPH HURLEY SCHOLARSHIP

Established in 1929 by Mrs. Jeremiah J. Hurley in memory of Warren Joseph Hurley, '29, for the benefit of one or more worthy students aspiring to the priesthood. Selection to be made by the President of the College. (Income on \$5,000.00)

THE "IN MEMORIAM" SCHOLARSHIP

Established in 1915 by an alumnus of the college for a deserving student. (Income on \$8,000.00)

THE REV. CHARLES L. KIMBALL, S.J. SCHOLARSHIP

Established in June, 1961 by a bequest from the Estate of Rev. Arthur B. Kimball. Income to be used to aid a worthy student selected by the Faculty. (Income on \$6,551.40)

THE OTTO SEIDENBURG KING SCHOLARSHIP

Established in October, 1954, by gifts from Atty. John King, '25. Income to be used for a deserving student from a Jesuit high school in the New York City area selected by the President of the College. (Income on \$12,325.00)

THE REV. MICHAEL H. KITTREDGE SCHOLARSHIP

Established in 1917 by Rev. Michael H. Kittredge, '75. (Income on \$5,000.00)

THE MASSACHUSETTS STATE COUNCIL OF KNIGHTS OF COLUMBUS SCHOLARSHIP FUND

Established in 1937 by the Massachusetts State Council Knights of Columbus; open to members and sons of members of the Knights of Columbus residing and having their membership in the Order in Massachusetts. Award to be made by competitive scholastic examinations under the administration of the College of the Holy Cross.

THE PATRICK W. LALLY MEMORIAL SCHOLARSHIP

Established in March, 1954, from the estate of James Lally to be awarded to a worthy graduate of St. Mary's High School, Milford, Mass., who will be selected by the President of the College of the Holy Cross. (Income on \$5,221.60)

THE MICHAEL J. LAWLOR SCHOLARSHIP

Established in February, 1949, by bequest from the late Retta M. Lawlor. Income to be used to aid a bright and needy student, resident in Waterbury, Conn., who in the opinion of college authorities, shall be deserving of financial assistance. (Income on \$5,000.00)

W. H. LEE MILK COMPANY ENDOWMENT FUND

Established on September 4, 1959 with a gift of 50 shares of Eastman Kodak with the provision that the income from these shares be added to the principal until September 1, 1973. After September 1, 1973, the income to be used for scholarship aid in accordance with specifications as set down in the agreements.

THE JOHN J. LEONARD SCHOLARSHIP OF THE M.C.O.F.

Founded in 1926 and restricted to members, or sons of members, of the M.C.O.F., selection to be made by competitive examinations. (Income on \$6,000.00)

THE REV. JOHN G. MAHONEY, S.J., A FORMER PROFESSOR AT THE COLLEGE, AND JAMES E. MAHONEY, '10, MEMORIAL SCHOLARSHIP

Established in 1946 by Mrs. Edward C. Donnelly in memory of her brothers; to be awarded to a deserving student studying for the degree of Bachelor of Arts in the Classical Course who is to be selected by the President of this College. (Income on \$20,000.00)

THE HENRY VINCENT MCCABE SCHOLARSHIP

Established in 1916 by the late Mary McCabe of Providence, R.I., for a deserving student. (Income on \$5,000.00)

THE REV. DENIS F. MCCAFFERY SCHOLARSHIP

Established on September 29, 1953, by bequest from the estate of Rose A. McCaffrey. (Income on \$700.00)

THE EUGENE AND MARGARET MCCARTHY SCHOLARSHIP

Established in July, 1962 by a bequest from the Estate of Margaret McCarthy. Income to be used to aid a worthy student with preference to be given to a resident of Springfield, Mass. (Income on \$24,702.63)

THE PETER MCCORD SCHOLARSHIP

Established by Mary Lambert McCord for a deserving student.

THE REVEREND JOHN F. McDONNELL SCHOLARSHIP FUND

Established in June, 1967, in memory of Reverend John F. McDonnell, '00. Income to be used for the education of deserving and needy students. Selection to be made by President of the College. (Income on \$10,000.00)

THE REV. DAVID F. MCGRATH SCHOLARSHIP I.

Established in 1907 by the Rev. David F. McGrath, '70, beneficiary to be selected by competitive examinations. Restricted to graduates of St. Mary's Parish School, Milford, Mass., if there be more than one eligible candidate. If but one such, graduates of Milford Public High School may be admitted to competition; if but one candidate from both schools, any one otherwise eligible in the State to be admitted to competition. (Income on \$6,000.00)

THE REV. DAVID F. MCGRATH SCHOLARSHIP II.

Established in 1920 by the Rev. David F. McGrath, '70; conditions same as the "Rev. David F. McGrath Scholarship I." (Income on \$6,000.00)

THE REV. DAVID F. MCGRATH SCHOLARSHIP III.

Established in 1920 by the Rev. David F. McGrath, '70; conditions same as the "Rev. David F. McGrath Scholarship I." (Income on \$8,000.00)

THE FRANK J. MCHUGH AND KATHLEEN B. MCHUGH SCHOLARSHIP FUND

Established on June 14, 1968, by bequest from the estate of Frank J. McHugh, Jr. (Income on \$50,000.00)

THE DR. FREDERICK J. MCKECHNIE SCHOLARSHIP

Established in December, 1962, by a bequest from the Estate of Mary I. Dunn. (Income on \$6,223.76)

THE MONSIGNOR JOHN W. MCMAHON SCHOLARSHIP

Established in 1938 under provisions of the will of Rt. Rev. Msgr. John W. McMahon, '67, to give scholarship aid to a Holy Cross student to be designated by the Reverend Pastor of St. Mary's parish, Charlestown, Boston, Massachusetts, preference being given to students coming from St. Mary's parish. (Income on \$5,000.00)

THE KATHERINE MCQUADE SCHOLARSHIP

Established in June 1967, by a bequest from the Estate of Katherine McQuade. (Income on \$17,668.45)

THE FRANCIS L. MILLER SCHOLARSHIP

Founded and augmented by gifts in honor of the late Francis L. Miller, Bursar of the College from 1931 to 1961. Income to be awarded to worthy and needy students with preference given to fatherless boys. (Income on \$27,366.39)

THE PATRICK J. MURPHY SCHOLARSHIP

Established in 1914 by Mrs. Ellen M. Murphy, as a memorial to her husband, the late Patrick J. Murphy, Worcester, Mass. (Income on \$1,500.00)

THE MONSIGNOR RICHARD NEAGLE SCHOLARSHIP

Established in 1943 by His Excellency the Honorable Alvan T. Fuller, former Governor of the Commonwealth of Massachusetts, in memory of the late Right Reverend Monsignor Richard Neagle of the Class of 1873, to assist boys qualified, in the opinion of the Faculty, but who otherwise could not afford such an expenditure as would be necessary to enjoy the educational and religious advantages of the College of the Holy Cross. (Income on \$35,000.00)

THE DENIS F. AND LORETTO RADEL O'CONNOR SCHOLARSHIP

Established on May 26, 1955 by Dr. Denis F. O'Connor, '93, to be used for a worthy student to be selected by college authorities. (Income on \$30,000.00)

THE O'DRISCOLL SCHOLARSHIP

Established in 1874, for a student (limited to residents of the City of Worcester), who is a candidate for the priesthood and is selected by the Bishop of Worcester or his delegate. (Income on \$3,000.00)

THE MAY AND SYLVAN OESTREICHER SCHOLARSHIP

Established on December 30, 1957, by gift of Sylvan Oestreicher. (Income on \$37,926.80)

THE MARY C. O'NEIL FUND FOR BRISTOL COUNTY STUDENTS

Established on January 7, 1955 by gifts from Margaret T. O'Neil, to be used to aid a student from Bristol County. (Income on \$19,973.98)

THE REV. DANIEL H. O'NEILL SCHOLARSHIP I.

Established in 1895, limited to residents of St. Peter's Parish, Worcester, Mass. (Income on \$1,000.00)

THE REV. DANIEL H. O'NEILL SCHOLARSHIP II.

Established in 1908, limited to the residents of the City of Worcester. (Income on \$1,500.00)

PENHALL-O'ROURKE SCHOLARSHIP

Established on September 9, 1958, by bequest of \$1,000.00 from the estate of Dr. James J. O'Rourke, '09 to be used for scholarship purposes in aiding a deserving student.

REVEREND LAWRENCE F. O'TOOLE SCHOLARSHIP

Established in May 1966, in memory of Reverend Lawrence F. O'Toole, '13 by his sister, Mrs. Florence Drury. Preference to priesthood aspirants with preference, first, to a member of St. Bernard's Parish, Worcester and, second, to anyone in the Diocese of Worcester. (Income on \$10,000.00)

THE REV. DR. PATRICK B. PHELAN SCHOLARSHIP

Established in 1917 by Rev. Dr. Patrick B. Phelan, '69; open to competition for graduates of the Sacred Heart School, Holyoke, Mass. (Income on \$16,000.00)

REVEREND MICHAEL G. PIERCE, S.J., SCHOLARSHIP FUND

Established by gifts from Robert H. McCooey, '52. (Income on \$3,000.00)

THE DAVID H. POSNER AND MARY MURPHY POSNER FOUNDATION

Established on July 1, 1957 by bequest from the estate of Mary M. Posner. Income to be used toward tuition of worthy students. (Income on \$14,922.68)

THE MR. AND MRS. ALOYSIUS F. POWER SCHOLARSHIP

Established by a gift from Mr. Aloysius F. Power, '23. Income to be awarded to whom the College authorities judge to be in need of financial assistance and worthy of aid. (Income on \$81,131.26)

THE REV. JOHN J. POWER SCHOLARSHIP

Established in 1907 by the late Rev. John J. Power, D.D., limited to residents of St. Paul's Parish, Worcester, Mass. (Income on \$1,500.00)

THE MARY A. PRENDERGAST SCHOLARSHIP

Established in 1945 under the will of the late Mary A. Prendergast for deserving orphan students. (Income on \$4,948.40)

THE PURPLE PATCHER SCHOLARSHIP

Established in June, 1963 by the staff of the yearbook, *The Purple Patcher*, Class of 1963, and augmented by the staffs of the Classes of 1964, 1965, 1966 and 1967. (Income on \$19,890.73)

THE "QUID RETRIBUAM" SCHOLARSHIP

Established in 1907 by a friend of education in gratitude for divine favors; if not filled by founder, competitive examinations will be held. (Income on \$8,000.00)

THE LILLIAN A. QUINN SCHOLARSHIP FUND

Established in 1968 by a bequest from the late Lillian A. Quinn. Income to be used to provide scholarship aid for worthy and needy students to be selected by the President of the College, preference being given to students from Immaculate Conception Parish, Worcester. (Income on \$28,000.00)

THE PATRICK W. RAFFERTY SCHOLARSHIP

Established in 1920 and open to competition among deserving students of the City of Worcester. (Income on \$2,000.00)

IN MEMORY OF DENNIS M. AND JOSEPHINE R. REARDON SCHOLARSHIP

Established on January 11, 1952, by bequest from the estate of Josephine F. Reardon. Income to be used to aid a worthy student preparing for the holy priesthood. (Income on \$10,575.39)

THE JOHN REID SCHOLARSHIP

Established in 1894, limited to residents of Worcester. (Income on \$1,500.00)

THE CATHERINE F. REILLY SCHOLARSHIP

Established on June 1, 1955, by bequest from the estate of Joseph J. Reilly, '04, in memory of his mother. Income to be used for a worthy student to be selected by college authorities. (Income on \$12,500.00)

THE JAMES H. REILLY SCHOLARSHIP

Established on June 1, 1955 from the estate of Joseph J. Reilly, '04, in memory of his father. Income to be used for a worthy student to be selected by college authorities. (Income on \$12,500.00)

THE REILLY MEMORIAL SCHOLARSHIP

Established in 1922 by the late Joseph J. Reilly, '04. (Income on \$1,000.00)

THE MARY J. ROBINSON SCHOLARSHIP

Established in 1943 by the late Mary J. Robinson in memory of her mother and father and brothers to assist deserving young men of the Roman Catholic faith in obtaining a collegiate education at the College of the Holy Cross. (Income on \$11,297.86)

THE REV. WILLIAM H. ROGERS SCHOLARSHIP

Established in 1918 by Rev. William H. Rogers, '68. (Income on \$10,000.00)

THE HON. JOHN E. RUSSELL SCHOLARSHIP

Established in 1907 by a Friend of the College. (Income on \$1,500.00)

THE MR. AND MRS. JOHN A. RYAN FAMILY SCHOLARSHIP FUND

Established in 1967, by Miss Mabel C. Ryan. (Income on \$500.00)

THE SCHOLLER FOUNDATION SCHOLARSHIP

Established on October 24, 1955. (Income on \$1,000.00)

THE JOHN F. SCOTT FUND

Established by gifts from John F. Scott, '08. Income to be used to aid worthy students from the State of Maine. (Income on \$2,500.00)

TIMOTHY A. SHEA SCHOLARSHIP FUND

Established by bequests totaling \$101,918.16 from the estate of Timothy A. Shea in memory of his parents, Mr. and Mrs. Daniel M. Shea; a brother, Michael F. Shea; and sisters, Katherine and Elizabeth. Income to be used exclusively for non-resident students residing in the City of Worcester and awarded on a competitive basis.

THE ELIZABETH SPANG SCHOLARSHIP

Established in 1936 by the will of Elizabeth Spang of West Haven, Connecticut. This income to be used toward the education of a "student of Holy Cross College whom the governing body of said College may deem to be in need of financial assistance for his college work and worthy of said scholarship." (Income on \$5,000.00)

IN MEMORY OF HELEN M. AND JOHN F. TINSLEY SCHOLARSHIP

Established on November 20, 1953 by bequest from the estate of John F. Tinsley. Income to be used to assist worthy students selected by the President of the College. (Income on \$71,829.20)

THE R. J. TOOMEY CO. SCHOLARSHIP

Established by gifts from John A. Toomey, '28, Lawrence T. Toomey, '30 and Richard J. Toomey, '23. (Income on \$4,600.00)

THE REV. DAVID W. TWOMEY, S.J., SCHOLARSHIP

Established on October 10, 1955 by gifts from family and friends of Fr. Twomey, S.J. Income to be used to aid a worthy student. (Income on \$21,100.00)

THE REV. ROBERT WALSH SCHOLARSHIP

Established in 1895, limited to residents of the Immaculate Conception Parish, Worcester, Mass. (Income on \$1,000.00)

THE STEPHEN W. WILBY SCHOLARSHIP

Founded by the Naugatuck Valley Alumni Association and friends in Connecticut. (Income on \$7,514.01)

THE JOHN A. WILLO SCHOLARSHIP

Established by a gift from Mrs. John A. Willo in memory of her late husband. Income to be awarded to worthy and needy students selected by the President of the College. (Income on \$20,000.00)

OWEN J. WOOD SCHOLARSHIP FUND

Established in May 1967 in memory of Owen J. Wood, '66, by The Worcester Undergraduate Club. The income is to be used to provide financial aid to a Worcester area student, with preference given to orphans. (Income on \$4,300.00)

WORCESTER FEDERAL SAVINGS AND LOAN ASSOCIATION EDUCATIONAL FUND

Established on April 1, 1960, by gift of \$3,500.00.

Financial Aid Acknowledgements

Many Holy Cross alumni clubs sponsor students of their selection for complete or partial tuition scholarships. Among those who have participated in this program are:

- Holy Cross Club of Boston
- Holy Cross Alumni Club of Worcester
- Holy Cross Club of Rhode Island
- Berkshire County Holy Cross Club
- Springfield, Massachusetts Alumni Association Club
- Holy Cross Club of Maine
- Holy Cross Club of Eastern New York
- Rochester Alumni Club
- Eastern Connecticut Holy Cross Club
- Plymouth Alumni Club

Many of these clubs are annual contributors; others contribute at various times.

Grateful acknowledgement is also due to the many corporations, foundations, fraternal organizations, P.T.A., high school associations and similar groups who have aided students of their selection by financial contributions toward tuition costs.

Prizes

THE BELLARMINI HISTORY MEDAL

The Bellarmine Gold Medal, the gift of Mr. and Mrs. Edward J. McGratty, Sr., in memory of Patrick H. and Elizabeth L. McGratty, for the best historical essay on colonial America.

1968: Not awarded

THE BOURGEOIS AWARD

The Bourgeois French Prize, the income on \$1,000, established in 1947 by Albert L. Bourgeois, Esq., '22, in memory of his late father, Pierre Bourgeois, and of his mother, Fabiola Bourgeois, to be awarded annually for the best essay on a subject relating to the French or their descendants in the United States.

1968: James P. Gilroy, '68

THE NELLIE M. BRANSFIELD PRIZES

The Nellie M. Bransfield Award, founded in 1946, by the will of the late Nellie M. Bransfield, income on \$2,000, to be awarded annually as prizes for excellence in elocution among the undergraduates.

1968: Robert M. Correnti, '69

THE FRANK D. COMERFORD PRIZE

The Frank D. Comerford Silver Medal, founded in 1942 by the management and employees of the Boston Edison Company, to be awarded annually at commencement exercises to a student of the graduating class for excellence in public speaking.

1968: Timothy L. Porter, '68

THE CROMPTON SCIENTIFIC MEDAL

The Crompton Gold Medal, founded in August, 1875, by George Crompton, Esq., for the best scientific essay submitted during the school year.

1968: Not awarded

THE JOHN J. CROWLEY PRIZE

The John J. Crowley Purse (income on \$1,000.00) awarded annually to provide purse or prize for best essay on any religious, literary, historical, economic or scientific subject.

1968: Gregory D. Arcaro, '68

THE PATRICK F. CROWLEY MEMORIAL PRIZE

The Patrick F. Crowley Purse, the income on \$1,000.00, founded in July, 1947, by Bridget T. Crowley, in memory of her brother, Patrick F. Crowley, to be awarded annually for proficiency in debating and oratory.

1968: John M. Creamer, '71

THE DeVALERA HISTORY PURSE

The DeValera Purse (income on \$1,000.00), the gift of Daniel H. Coakley, for the best essay on a subject taken from Irish history.

1968: Not awarded

THE FALLON DEBATING PRIZE

The Fallon Debating Prize, founded in 1901 by Rev. John J. Fallon of the Class of 1880 (income on \$1,000.00).

1968: Dennis E. Egan, '69

Gary P. Witte, '68

THE FLAHERTY PRIZE IN HISTORY

The Flaherty Gold Medal, founded in May, 1903, by Patrick W. Flaherty, Esq., to be awarded annually for the best essay on a subject selected by the faculty.

1968: Not awarded

THE FLATLEY PHILOSOPHY PRIZE

The Flatley Gold Medal, founded in 1890 by the late Reverend Michael F. Flatley of the Class of 1865, to be awarded annually to a senior for proficiency in philosophy.

1968: Not awarded

THE EDNA DWYER GRZEBIEN PRIZE

The Edna Dwyer Grzebien Prize, established in 1960 by Doctor Thomas W. Grzebien in honor of his wife, former teacher of modern languages at Classical High School, Providence, R.I., income on \$1,000.00, to be awarded annually to a student proficient in modern languages.

1968: Patrick J. Treanor, '68

THE REVEREND WILLIAM F. HARTIGAN MEDAL

The Reverend William F. Hartigan Medal, founded in May, 1932, by Josephine C. Hartigan in memory of her brother, the Reverend William F. Hartigan, to be awarded annually to a student of the graduating class submitting the best essay on a subject in religion.

1968: John M. Murtaugh, '68

THE HOLY CROSS CLUB OF WORCESTER PRIZE

Established in 1966 by the H. C. Club of Worcester. A plaque and cash award to be presented each year to the highest ranking Worcester area senior.

1968: James J. Dooley, '68

THE KAVANAGH AWARD

The Kavanagh Medal, established in 1952 by the late Right Reverend Michael P. Kavanagh of the Class of 1893, to be awarded annually to the student writing the best original essay on some phase of Catholic art or Christian archaeology.

1968: Not awarded

THE KILLEEN PRIZE IN CHEMISTRY

The Edward V. Killeen, Jr., Chemistry Purse, for general excellence throughout the Bachelor of Arts premedical course in chemistry.

1968: Andrew M. Grimes, '68

THE FATHER GEORGE A. KING, S.J., AND RICHARD J. KEENAN MEMORIAL AWARD

Established in January, 1965, by Charles A. Keenan in memory of his son, Richard, of the Class of 1967, and the late Rev. George A. King, S.J., a professor of political science at the College. To be awarded to a member of the graduating class for proficiency in political science.

1968: G. Alan Tarr, '68

George M. Witek, '68

THE KRANICH PRIZE

The Kranich Gold Charm, the gift of the Kranich Brothers, Inc., of Worcester, Massachusetts, to be awarded annually to the student contributing the best essay to "The Purple."

1968: Not awarded

THE JOHN C. LAWLOR MEMORIAL PRIZE

The John C. Lawlor Gold Medal, the gift of the Class of 1911, to perpetuate the memory of Dr. John C. Lawlor of the Class of 1911, to be awarded annually to a letterman of the graduating class adjudged the outstanding student and athlete during the college course.

1968: Richard A. Krzyzek, '68

THE WILLIAM E. LEAHY AWARD

The William E. Leahy Award in memory of William E. Leahy of the Class of 1907, to the outstanding debater in the B.J.F. Debating Society. This memorial prize consists of a medal and a cash award of \$100.00.

1968: Patrick J. Collins, '69

THE LEONARD PURSE

The Leonard Award, founded in 1951 by the will of the late Reverend John F. Leonard, to be awarded annually for proficiency in oratory, debating or like competition.

1968: Bernard F. Swain, '70

THE MARKHAM MEMORIAL PRIZE

The Markham Memorial Prize consisting of a Gold Medal and a Purse of \$100.00, established in 1947 by the Most Reverend Thomas F. Markham, D.D., of the Class of 1913, in memory of his parents, James and Honora Hickey Markham, to be awarded annually to a junior or a senior designated by the Dean as having the highest rank of academic proficiency in the philosophy course of natural theology.

1968: Not awarded

THE GERTRUDE MCBRIEN MATHEMATICS PRIZE

The Gertrude McBrien Mathematics Prize, established in 1960, income on \$1,000.00, to be awarded annually to a senior for proficiency in mathematics.

1968: Richard J. Bonneau, '68

THE MCMAHON HISTORY PURSES

The McMahon Purses, three in all, founded in 1927 by the late Right Reverend Monsignor John W. McMahon of the Class of 1867, to be awarded annually for the best essays on the history of the Catholic Church in New England.

1968: Not awarded

THE GEORGE B. MORAN AWARD

The George B. Moran Award, established in 1965 by the Textile Veterans Association, to a senior who has given evidence of scholarship and leadership in school activities. U.S. Savings Bond and Medal.

1968: Richard J. Bonneau, '68

THE NUGENT PHYSICS MEDAL

The Nugent Gold Medal, founded in June, 1894, by the Reverend Edward Evans Seagrave to perpetuate the memory of his ward, John T. Nugent, who died at the College in 1893, awarded annually for general excellence throughout the course in physics.

1968: Mark G. Roberts, '68

THE O'CONNOR DEBATING PRIZE

The Joseph J. O'Connor Purse, income on \$1,000, the gift of the late Joseph J. O'Connor of the Class of 1909.

1968: Philip J. Egan, '71

Stephen L. Urbanczyk, '71

THE MRS. KATE C. POWER MEDAL

The Mrs. Kate C. Power Medal, founded in 1942 by the will of the late Mrs. Kate C. Power, to be awarded to the highest ranking student in the College of the Holy Cross in the Bachelor of Arts (with Honors) Course in the Sophomore year.

1968: Thomas E. Moisan, '70

THE PURPLE PRIZE

The Purple Purse, the gift of the College, to be awarded annually to the student contributing the best poem to "The Purple."

1968: Richard E. DiLallo, '68

THE REVEREND JOHN F. REDICAN PRIZE

The Reverend John F. Redican Medal, donated by a friend in memory of the Reverend John F. Redican, '78, to be awarded annually to a senior designated by the Department of Theology as having demonstrated proficiency in the study of Theology.

1968: Not awarded

THE REILLY MEMORIAL PRIZE

The James H. Reilly Memorial Purse, the income on \$600, founded by Joseph J. Reilly of the Class of 1904 and immediate relatives, to be awarded annually to the student contributing the best short story to "The Purple."

1968: David E. Ludt, '69

THE FREEMAN M. SALTUS PRIZE

In memory of Freeman M. Saltus, awarded for excellence in essays on labor or economics.

1968: Not awarded

THE STRAIN PHILOSOPHY PRIZE

The Strain Gold Medal founded in June, 1877, to be awarded annually for the best essay on a subject selected from the field of philosophy.

1968: Not awarded

THE LIEUTENANT WILLIAM PETER SULLIVAN, JR., MEDAL

The Lieutenant William Peter Sullivan, Jr., Medal, the gift of Mrs. William P. Sullivan, Jr., in memory of her late husband, Lieutenant William Peter Sullivan, Jr., U.S. Naval Reserve, of the Class of 1939, to be awarded annually to the member of the varsity track team who, by vote of his fellow team members, is adjudged to have merited this award.

1968: John T. Collins, '68

THE VARSITY CLUB NORTON PURSE OR MEDAL

For an athlete in the Bachelor of Arts Curriculum. (Income on \$500.00)

1968: Richard E. Deschenes, '68

THE JOHN E. WICKHAM MEMORIAL PRIZE

The John E. Wickham Gold Medal, founded in 1939 by Mrs. Nicholas Wickham of Lee, Massachusetts, in memory of her son, The Reverend John E. Wickham of the Class of 1899, to be awarded annually to the highest ranking student of the graduating class.

1968: Paul E. McNamee, '68

DEGREES CONFERRED MAY 29, 1968

HONORARY DEGREES

Doctor of Laws

GEORGE JOSEPH FELDMAN

WILLIAM ROBERT McANDREW

Doctor of Commercial Science

JAMES JOSEPH SHEA

Doctor of Letters

RIGHT REVEREND MONSIGNOR PAUL DASEN RIEDL

DEGREES IN COURSE

Master of Science

DANIEL EDWIN FLORYAN

THOMAS EDWARD MERCHANT

RANDAL FRANCIS SACKOVICH

Bachelor of Arts Honors

JOHN EDWARD ANDERSON (*Cum Laude*)

RICHARD JOSEPH BONNEAU (*Magna Cum Laude*)

THOMAS EDWARD CECIL (*Magna Cum Laude*)

PATRICK EDWARD CLANCY (*Magna Cum Laude*)

JOHN JOSEPH DOWLING III (*Cum Laude*)

JOHN CAROL ENDRES, JR. (*Magna Cum Laude*)

ROBERT JAMES GRENIER (*Cum Laude*)

ANDREW MARTIN GRIMES (*Magna Cum Laude*)

PHILIP SAMUEL GUISTOLISE (*Cum Laude*)

THOMAS HAROLD HERNACKI (*Cum Laude*)

JOSEPH CARL HOPKINS (*Cum Laude*)

TERRANCE BROPHY KEARNS (*Cum Laude*)

ROBERT EUGENE KENNEDY (*Cum Laude*)

THOMAS JOSEPH LADA (*Cum Laude*)

RICHARD PHILIP LEBLANC (*Summa Cum Laude*)

TERRENCE JAMES McLARNEY

PAUL EDWARD McNAMEE (*Summa Cum Laude*)

DANIEL EDWARD MONAGLE (*Summa Cum Laude*)

LEO JOHN MURPHY, JR. (<i>Cum Laude</i>)	GEORGE ALAN TARR (<i>Cum Laude</i>)
PHILIP JAMES RETTIG (<i>Magna Cum Laude</i>)	PATRICK JOSEPH TREANOR
LEONARD PETER RIENZI	RALPH FRANCIS VOLPE, JR. (<i>Cum Laude</i>)
RICHARD THOMAS SPONZO (<i>Summa Cum Laude</i>)	EDWIN VALENTINE WOODSOME, JR. (<i>Summa Cum Laude</i>)
MARK ANDREW SULLIVAN (<i>Cum Laude</i>)	

Bachelor of Arts

ROBERT WILLIAM ABBATE	PAUL PETER BLANCHETTE
DANIEL ARTHUR ABODEELY	JAMES WHITNEY BLUM (In Absentia)
CARL JOSEPH ADAMS, JR.	DAVID PAUL BOBZIEN
MICHAEL JOSEPH ADAMS	PAUL MAURICE BOIRE
TIMOTHY JOSEPH AHEARN	WILLIAM BRENDAN BOUNDY, JR.
EDGAR PASOS AHLERS	EDWARD FRANCIS BOURDON
THOMAS MICHAEL AKSTENS	EDWARD LOUIS BOVE
THOMAS JOSEPH AMY	ROBERT JOHN BOWMAN
THOMAS ANTHONY ANDRUSKEVICH	EDWARD DALY BOYLAN
JAMES STEPHEN ANGYAL	JAMES CHRISTIAN BOYLE
JOHN DOMINIC AQUILINO, JR.	JAMES HOBAN BRASSEL, JR.
GREGORY DAVID ARCARO	EDWARD DAVID BRASTED
ANTHONY FRANCIS AUBERTIN	PATRICK WILLIAM BRAWLEY
BRADLEY JAMES AUSTIN	JOHN ARTHUR BRAZINSKI
FREDERICK EDWARD BACON, JR.	THOMAS THORNTON BROWN, JR.
JOHN ANDREW BANIONIS	VINCENT THOMAS BROWN, JR.
*MICHAEL DANIEL BARRY	ARTHUR BASIL BRUNELL, JR.
EDWARD LEARY BARTLETT, JR.	JOHN DANIEL BRUNELL
ALFRED ANTHONY BARTOLUCCI	JOSEPH DANIEL BUCKLEY, JR.
RAYMOND IRVING BASANTA III	JEROME JOSEPH BURDULIS
ROBERT WAYNE BASS	FREDERICK JOSEPH BURGOWNE
PHILIP CHARLES BATES	EDMUND MARTIN BURKE
THOMAS JOHN BEALE	JAMES PATRICK BURKE
RAYMOND ROBERT BEAM, JR.	EDWARD ANDRE BUSALD
DAVID RICHARD BEAUVAIS (<i>Cum Laude</i>)	MARK SMITH BUTLER
JOHN RALPH BENOTTI	THOMAS FRANCIS BUTLER
LOUIS URBAN BIGLIANI	WILLIAM FRANK BUTLER III
VINCENT MICHAEL BILOTTA III	RICHARD ANTHONY BUTTINA
ROBERT RALPH BIONDI	STEPHEN PAUL BYRNES
JOHN RALPH BIOTY, JR.	FRANCIS EDWARD CALLAHAN, JR.
RAYMOND LYNN BITTEKER (<i>Cum Laude</i>)	THEODORE MICHAEL CAMESANO

*Bachelor of Science

THOMAS JOSEPH CANAVAN
 PAUL JOSEPH CANGEMI
 MICHAEL JOHN CANNING (*Cum Laude*)
 PETER ANDREW CAPRICE
 JOHN JOSEPH CAREY
 RICHARD ARMAND CARMIGNANI
 ALFRED JOHN CAROLAN, JR.
 WAYNE FRANCIS CASCIO
 JOSEPH MICHAEL CASEY
 ROBERT JAMES CASSIDY
 FELIX JOSEPH CERRATO, JR.
 GEORGE EDWARD CHANDLEY
 PAUL ANTHONY CIPRO
 ANTHONY JOSEPH CIURCZAK
 ROBERT FRANCIS CLARK
 WILLIAM WALTER CLEARY
 DAVID MILLER CODDAIRE
 JOHN JOSEPH COGAN, JR.
 ARTHUR RICHARD COHN
 DAVID FRANCIS COLLINS
 EDWARD POWERS COLLINS
 FRANCIS FARRELL COLLINS, JR. (*Cum Laude*)
 JOHN TIMOTHY COLLINS
 PETER BERGIN COLLINS
 JAMES EDWARD CONLAN, JR.
 HERBERT ANDREW CONNOLLY
 JOHN CONNOLLY, JR.
 WILLIAM RIORDAN CONNOLLY
 EUGENE KENNETH CONNORS (*Cum Laude*)
 GERARD MICHAEL CORRIGAN
 GENE FRANCIS COSKREN
 PETER DANIEL COSTELLO
 CHARLES JOSEPH COTE
 JOHN SCOTT COTE
 JAMES JOSEPH COTTER III
 ROBERT EDWARD COURTNEY III
 JOHN PAUL COUSINS
 JOSEPH ALBERT COUTURE
 DANIEL MATTHEW CRANE
 ROGER RYAN CRANE, JR.
 FRANCIS PATRICK CROTTY, JR.
 JOHN JOSEPH CROWLEY, JR.

RALPH PATRICK CUNNINGHAM
 JOHN JOSEPH CURRAN, JR.
 BRIAN MICHAEL CURTIN
 JAMES ANTHONY DALY, JR.
 PATRICK JOSEPH DAMANTI
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 Frederick L. Nagle, Jr.
 National Aeronautics and Space Ad-
 ministration
 National Catholic Education Associa-
 tion
 National Clergy Conference on Alco-
 holism
 National Conference of State Legisla-
 tive Leaders
 National Education Association of
 U.S.
 National Maritime Union of America
 National Municipal League

National Review	Frank M. Reuter, '64
Kevin Neilson, '65	Dr. Robert P. Ricker, '62
New England Economic Research	Charles A. Rini, '60
University of New Hampshire News Bureau	Rockefeller Foundation
Our Lady of New Melleray Abbey, Dubuque, Iowa	Henry Romney
New York State Labor Relations Board, New York	Harry Rush, '62
Newberry Library, Chicago	Rev. William Russell
Newton College of the Sacred Heart	Robert A. Ryan, '62
New York State University at Albany	Dr. Joseph A. SanFilippo, '61
Capt. Edward M. Nigro, '64	Michael C. Scanlon, '62
Dr. & Mrs. Michael A. Nocero, Jr.	Anthony J. Schaeffer, M.D., '64
Norman Foundation	Shell Oil Company
Insurance Company of North America	Smithsonian Astrophysical Observatory
Northeastern University	Smithsonian Institution
Northwestern University	Thomas A. Schweitzer, '66
David F. Oberhauser, '62	In memory of Lt. Timothy J. Shorten, '64 (by Mrs. Catherine M. Dimock)
Oblates of Mary Immaculate	John P. Sindoni, '67
Guy E. O'Brien, '66	Sisters of Mercy, Worcester, Mass.
Charles P. O'Connor, '63	James C. Soldani, '67
Patrick F. O'Connor, '32	Lewis B. Songer, '55
Sylvan Oestreicher, LL.D., '56	James Spaustat, '65
Dr. John W. O'Meara (Estate of)	Standard Oil Company
Pan American Union	Miss Katherine B. Sullivan
Dr. Raymond K. Panda, '62	Mrs. Majie Padberg Sullivan
William D. Pandolfc, '67	Theodore F. Sullivan, '64
Thomas Galiru Peter, '67	Thomas E. Sullivan, '64
Pharmaceutical Manufacturer's Association	University of Texas
William T. Pizzi, '65	David Ticchi, '67
Population Reference Bureau	Title II-A Higher Education Act. 1965
Roland Poulin	Rev. Wilfred A. Tisdell
Princeton University	Mrs. James A. Treanor
Mrs. Andrew Rafferty	Gerard Treanor, Sr.
Miss Winifred Rawlins	Miss Gertrude Treanor
Joseph J. Redington, '63	James A. Treanor, III, '60
Barry C. Reed, '49	John Holland Treanor, '23
Philip Reidy, '41	Michael Treanor, '63
Robert Reidy, '37	Patrick Treanor, '67
William L. Renchan, '10	Charles W. Trombly, Jr., '62
Chester J. Renkun, M.D., '62	U. S. Advisory Commission on Intergovernmental Relations
Republican National Committee	U. S. Arms Control and Disarmament Agency

U. S. Commission on Civil Rights
U. S. Commerce Department
U. S. Department of Defense
U. S. Department of Health, Education & Welfare
U. S. Department of Labor
U. S. Department of State
U. S. Marine Corps
U. S. Navy Dept.
U. S. Senate
University of Massachusetts Library
University of Notre Dame Library
James J. Vanecko, '63
Dr. Andrew Van Hook
Dr. Roman Verhaalen

Virginia Commission on Constitutional Government
Dr. Edward Wall
Edward F. Ward, '65
Richard M. Warren, '65
West Virginia University Library
Thomas H. Wetmore
Ralph Willard, '67
Worcester Art Museum
City of Worcester
Antoinette D. Zapatka
Dr. John A. Zawacki, '63
Theodore P. Zoli, Jr.
Dr. Rudolph L. Zlody

CORRESPONDENCE DIRECTORY

Correspondence should be addressed to all college officials listed below and mailed to College of the Holy Cross, Worcester, Massachusetts 01610.

Academic Records	Registrar
Alumni Placement	Director of Alumni Placement
Admission and Catalogs	Director of Admission
Alumni Affairs	Alumni Executive Secretary
Alumni Fund	Director of Alumni Fund
Archives	Archivist
Athletics	Director of Athletics
Business Affairs	Vice President for Business Affairs
Campus Center	Director of Campus Center
Counseling Center	Director of Counseling Center
Development Program	Vice President of Development and College Relations
Educational Program	Vice President and Dean of the College
Financial Aid	Director of Financial Aid
General College Policy	President
Graduate Studies	Director of Graduate Studies
Library Information	Librarian
News Bureau	Director of News Bureau
Personnel	Director of Personnel
Physical Plant	Business Manager
Public Relations	Director of Public Relations
Purchasing	Director of Purchasing
Special Studies, Honors Programs.....	Director of Special Studies
Student Activities.....	Director
Student Housing	Dean of Men
Student Personnel.....	Dean of Students
Treasurer's Office	Treasurer

TELEPHONE DIRECTORY

AREA CODE 617

Alumni Executive Secretary	793-2525
Business Manager	-2438
Chaplain of the College	-2489
Dean of Men.....	-2411
Dean of the College.....	-2541
Dean of Students	-2428
Director of Admission	-2443
Director of Alumni Fund	-2415
Director of Alumni Placement.....	-2427
Director of Athletics	-2582
Director of Campus Center	-2564
Director of Counseling Center	-3363
Director of Graduate Studies	-2466
Director of News Bureau	-2419
Director of Personnel	-2424
Director of Public Relations	-2410
Director of Purchasing	-2441
Director of Special Studies	-2498
Director of Student Activities	-2564
Infirmary	-2276
Information and Operator	-2222
Librarian	-3371
Office of the President	-2525
Office of Student Activities	-2564
Registrar	-2511
ROTC, Air Force	-3343
ROTC, Naval	-2457
Treasurer	-2514
Vice President for Business Affairs	-2515
Vice President and Dean of College	-2541
Vice President for Development and College Relations	-3472

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Bequests

Gifts by will to Holy Cross are essential to the future of the College. The unrestricted gift is the most useful and effective since it can be allocated where the need is greatest. However, a gift for a specific purpose is also vital and may take the form of endowed chairs, named scholarships, buildings, books for the library, research equipment, works of art, etc.

The following suggested form for a bequest to the College of the Holy Cross should be adapted or rewritten by legal counsel to fit the donor's individual situation.

Legal Form of Bequest

I give, devise and bequeath to the Trustees of the College of the Holy Cross, a corporation existing under the laws of the Commonwealth of Massachusetts, and located in the City of Worcester, Commonwealth of Massachusetts, the sum of —— Dollars (or otherwise describe the gift) for its general corporate purpose (or name a particular corporate purpose).